

YEAR 2015 TRANSPORTATION PLAN

HATS HUNTSVILLE AREA TRANSPORTATION STUDY

**Prepared by the
Planning Division of the City of Huntsville
Urban Development Department
in Cooperation with
The Bureau of Transportation Planning
Alabama Department of Transportation**

April 1995

RESOLUTION NO. 4-95

**HUNTSVILLE AREA TRANSPORTATION STUDY
YEAR 2015 TRANSPORTATION PLAN**

WHEREAS, the Intermodal Surface Transportation Act (ISTEA) and the U.S. Department of Transportation require a metropolitan planning process that includes the development of a transportation plan addressing at least a twenty-year planning horizon; and

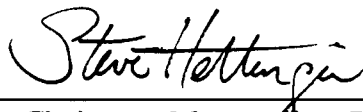
WHEREAS, the Metropolitan Planning Organization (MPO) of the Huntsville Area Transportation Study has heretofore caused to be made careful and comprehensive studies of the transportation system in the Huntsville urbanized area; and

WHEREAS, MPO staff has prepared a long-range transportation plan in accordance with ISTEA regulations; and

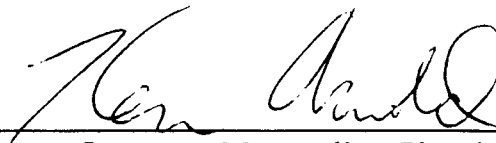
WHEREAS, a public hearing to consider the proposed plan was held in accordance with adopted public involvement procedures for transportation planning in the Huntsville urbanized area;

NOW, THEREFORE, BE IT RESOLVED by the Metropolitan Planning Organization of the Huntsville Area Transportation Study hereby adopts the attached Year 2015 Transportation Plan.

ADOPTED, this the 20th day of April, 1995.



Chairman, Metropolitan Planning Organization



Secretary, Metropolitan Planning Organization

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EXECUTIVE SUMMARY

The Year 2015 Transportation Plan is an intermodal plan that considers all modes of the existing transportation system, identifies needs, provides policy direction and defines the goals for planning and project development in the Huntsville urban area for the next 20-year period. The plan was developed under provisions of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and joint regulations issued by the Federal Highway Administration and Federal Transit Administration governing development of metropolitan plans and programs.

The Year 2015 Transportation Plan is envisioned as a guide to decision makers actions in a regional context for moving people and goods in the most effective manner, while preserving the environment and making the best use of limited resources.

I. HIGHWAY ELEMENT

The following table and map summarize the major highway projects selected for improvement over the 20-year time period. The proposals are general and do not represent specific alignments and locations. Additional studies will be conducted for each specific project to determine location and right-of-way needs.

YEAR 2015 HIGHWAY PLAN

Map #	Project	From	To	Existing Lanes	Proposed Lanes
1	Ardmore Highway (AL 53)	Mastin Lake Rd.	Study Area	2	5
2	Bailey Cove Rd. Extension	Green Cove Rd.	Hobbs Island Rd	0	5
3A	Browns Ferry Rd.	Sullivan St	Balch Rd.	2	3
3B	Browns Ferry Ext.	Chapel Rd.	County Line Rd.	0	3
4	Chaney Thompson Rd	Hobbs Rd	Green Cove Rd	2	3
5	County Line Rd.	Mill Rd.	SR 20	2	4
6	Dug Hill Rd	King Drake Rd	US 431	2	3
7	Eastern Bypass	U.S. 72 East	Old U.S. 431	0	4
8	Explorer Blvd.	Explorer Way	East of Mariner Way	0	4
9	Farrow Rd.	Explorer Blvd.	Slaughter Rd.	0	4
10	Four Mile Post Ext.	Bailey Cove Rd.	Big Cove Rd.	0	3
11	Governors Dr.	Memorial Pkwy.	California St.	4	7
12	Green Mtn./Shawdee Rd. Col.	Bailey Cove Rd.	Shawdee Rd.	0	3
13	High Mtn Rd	US 72	Bankhead Pkwy	0	2
14	Hobbs Rd./Redstone Rd.	Redstone-Bell Mtn.	Southern Bypass	2	5
16A	Holmes Avenue	Jordan Lane	Sparkman Dr.	2	3
16B	Holmes Avenue	Jordan Lane	Woodson St.	2	3
17A	Hughes Road	Mill Road	Madison Avenue	2	4
17B	Hughes Road	Madison Avenue	Hwy. 72 West	2	3
18A	I-565/U.S. 72 East	Maysville Rd	High Mtn Rd.	4	6

Map #	Project	From	To	Existing Lanes	Proposed Lanes
18B	I-565/U.S. 72 East	High Mtn Rd.	Eastern Bypass	4	4
19	Leeman Ferry Rd. Ext.	Johnson Rd.	Vermont Rd.	0	3
20	Mariner Way	Old Madison Pike	Explorer Blvd.	0	4
21	Martin Rd	Whitesburg Dr.	Patton Rd.	2	4
22	Mastin Lake Rd	US 231	US 72	2	2
23A	Memorial Pkwy.	Oakwood Ave.	Northern Bypass	4	4
23B	Memorial Pkwy.	Martin Rd	Hobbs Island Rd	4	4
24	Meridian St	Oakwood Ave	Pratt Ave	2	5
25A	Moores Mill Rd.	U.S. 72 East	Winchester Rd	2	5
25B	Moores Mill Rd.	Winchester Rd	Northern Bypass	2	5
26A	Northern Bypass	U.S. 231 along Homer Nance Rd.	U.S. 72 East	2	4
26B	Northern Bypass	SR 53 along Nick Fitchard Rd., Bob Wade Ln.	U.S. 231	2	4
27	Oakwood Rd.	Adventist Blvd	Rideout Rd.	2	4
28A	Old Madison Pike	Madison City Limits	Miller Blvd.	2	4
28B	Old Madison Pike	Miller Blvd	Cambridge Dr.	2	3
28C	Old Madison Pike	Thornton Ind Park	Madison City Limits	2	4
28D	Old Madison Pike	Cambridge Dr.	Sullivan St	2	4
29	Plummer Rd.	Ardmore Hwy (U.S. 53)	Rideout Rd.	2	3
30	Slaughter Road	I-565	U.S. 72 West	2	5
31A	Southern Bypass	Martin Rd	Weatherly Rd Ext	0	4
31B	Southern Bypass	I-565	Martin Rd	4	4
31C	Southern Bypass	Weatherly Rd Ext	US 231	0	4
32	Stringfield Rd.	Blue Spring Rd.	Jordan Ln.	2	3
33	Sutton Rd.	U.S. 431	Old Big Cove Rd.	2	3
34	Taylor Rd/Terry Drake Rd	Sutton Rd	Old Big Cove Rd	2	3
35	Triana Blvd Ext	Existing	Southern Bypass	0	2
36	U.S. 72/University Dr	Rideout Rd	County Line Rd	4	7
37	Vermont Rd Ext.	Leeman Ferry Ext	Triana Blvd Ext	0	2
38A	Wall Triana Hwy. (Sullivan St)	Highway 20	Mill Road	2	5
39	Wall Triana Hwy.	East Gate Dr	Tennessee River	2	5
40	Weatherly Rd. Ext.	Memorial Pkwy.	Southern Bypass	0	5
41	Winchester Rd.	Meridian St.	Bell Factory Rd	2	5
42	Wynn Dr Ext	No. of University Dr.	Adventist Blvd	0	5

II. PUBLIC TRANSPORTATION ELEMENT

Recommendations for public transportation include:

- A. Expansion of routes to the following areas:
 - 1. Weatherly Rd/Bailey Cove Rd
 - 2. Space & Rocket Center/Airport/Research Park
 - 3. Five Points and Chapman
 - 4. Redstone Arsenal
 - 5. Downtown circulator
- B. New transfer facility
- C. Additional repair and maintenance facilities

III. CONGESTION MANAGEMENT ELEMENT

Recommended traffic operations improvements and pedestrian, bicycle and greenway improvements which can aid in congestion management are summarized as follows:

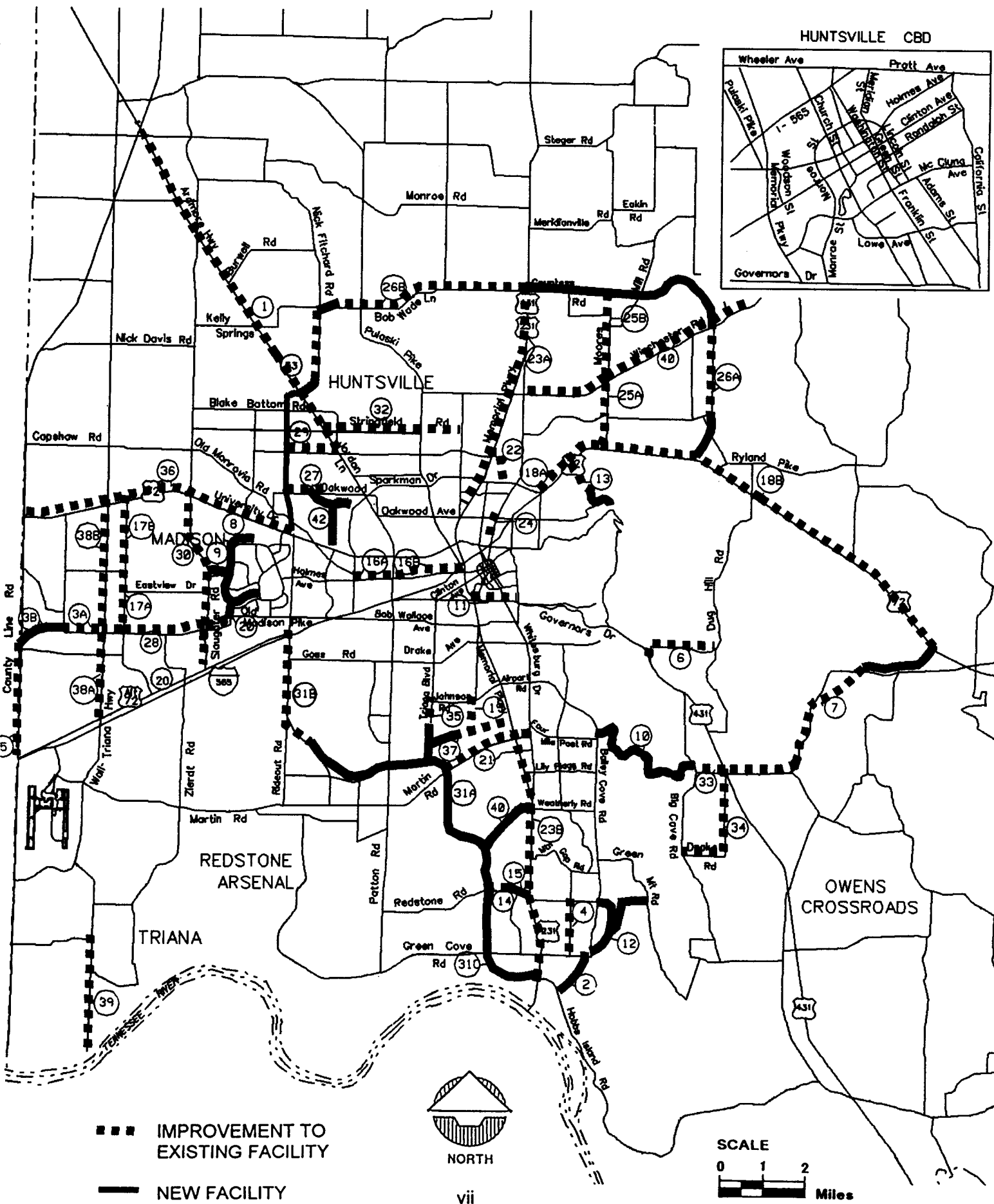
- A. 41 CMS and 20 SMS improvements (see p. 7-2 through 7-4)
- B. Pedestrian/Bicycle/Greenways Plans: the MPO adopts the City of Huntsville Sidewalk Improvement Plan, Bikeway Plan and Greenway Plan as part of the Long-Range Transportation Plan. The following potential enhancement projects have been identified:
 - 1. Aldridge Creek Greenway extension
 - 2. Indian Creek Greenway
 - 3. L&N Railroad bikeway
 - 4. McDonald Creek
 - 5. Broglan Branch

IV. MAJOR INVESTMENT ELEMENT

The following projects were identified as major transportation investments requiring further study:

- A. Memphis to Huntsville to Atlanta and Chattanooga Highway project: the MPO recommends two routes through the urban area, I-565 and the Southern Bypass, which should be considered in the feasibility study currently underway.
- B. Huntsville International Airport Passenger and Cargo Hubbing: the impact of airport passenger and cargo hubbing should be considered in the long-range plan after completion of the Airport Authority's Master Plan.
- C. Pipeline Fuel: a feasibility study should be performed to determine the economic viability of constructing a pipeline to transport petroleum products to North Alabama.
- D. Intermodal Stack-Train Overflow Project: further consideration should be given to the potential increase in rail/truck movements at the International Intermodal Center as a result of "stack-trains" exceeding the capacity of the intermodal terminals in Memphis.
- E. High Speed Ground Transportation: the MPO supports the development of a feasibility study of the potential for high-speed ground transportation in the Memphis to Huntsville to Atlanta and Chattanooga High Priority Corridor on the National Highway System.

YEAR 2015 ADOPTED HIGHWAY PLAN



CHAPTER I

INTRODUCTION

Transportation planning is the process by which transportation improvements (streets, sidewalks, bikeways, etc.) are conceived, tested, and programmed for future construction. The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) requires that all urban areas over 50,000 population have a cooperative, comprehensive, and continuous transportation planning process in order to qualify for Federal funding for constructing improvements. The 1990 Huntsville urban area population was 180,315 according to the Census Bureau.

ISTEA requires the development of a long range plan in urban areas addressing at least a 20-year planning period. The current Year 2005 Transportation Plan was adopted by the Metropolitan Planning Organization in 1991 and has been modified since that time. This report summarizes the highlights of the development of the Year 2015 Transportation Plan for the Huntsville Transportation Study Area. The study was conducted by the City of Huntsville Planning Division with technical assistance provided by the Alabama Department of Transportation. City of Huntsville Engineering Division, Traffic Engineering Office and the Public Transit Division of the Public Services Department also contributed to this plan document. Policy guidance was provided by the elected officials on the Metropolitan Planning Organization.

ORGANIZATION FOR TRANSPORTATION PLANNING

The governing body for the Huntsville Area Transportation Study is the Metropolitan Planning Organization (MPO). The MPO is composed of elected officials from the participating local governments and a representative of the Alabama Department of Transportation. All federally funded transportation projects in the urban area must be programmed for construction by the MPO and be taken from a plan approved by the MPO.

The MPO receives technical advice on transportation plans and programs from the Technical Coordinating Committee (TCC). The TCC consists of technical and professional members of the community who can furnish expert guidance for plan development and implementation. The TCC reviews procedural aspects of the transportation planning process and recommends alternate transportation plans and programs to the MPO.

Structured input from citizens to the MPO is provided by the Citizens' Advisory Committee (CAC). The CAC is comprised of a cross section of area residents appointed to serve by the MPO. Through public hearings, surveys, and regularly held open meetings, the CAC attempts to give all interested parties an opportunity to express their views on transportation related matters. Recommendations on transportation plans and programs are passed from the CAC directly to the MPO. A public involvement process has been adopted by the MPO (see Appendix A).

To assure an ongoing transportation planning process and to assist in the operation of the previously discussed committees, a Transportation Planning Process Coordinator is appointed by the MPO. The Coordinator for the Huntsville Area Transportation Study is the Director of the Huntsville City Planning Division. The Coordinator, with support from his staff, acts as a liaison between agencies involved in the transportation planning process, develops and maintains reports and records necessary for the administration of the planning process and actively participates in recommending plans and programs for transportation

improvements to the MPO.

One of the primary responsibilities of the Huntsville Area Transportation Study is to develop and maintain a comprehensive street and highway plan for the Huntsville area. The preparation of this plan is made possible by staff support from the Huntsville Planning Division and the Alabama Department of Transportation. These two agencies, working through the organized committees, provide the functions necessary for development of the major street and highway plan.

The Huntsville Planning Division coordinates the planning effort and generates local data used to predict future levels of travel. The Alabama Department of Transportation, in cooperation with the in-house staff, serves as a technical advisor, performing the mathematical modeling required to predict future traffic and advising local officials on procedural aspects of the planning process. Both agencies rely upon review and recommendations from the Technical Coordinating and Citizens' Advisory Committees in carrying out these functions.

The Metropolitan Planning Organization is responsible for official adoption of the Long-Range Transportation Plan. When deciding upon a plan for adoption, the MPO relies on public hearings, the recommendations of the two standing committees, as well as advice from the staff performing the actual planning operations. Once the plan is adopted, it is subject to amendment as changing events may require.

PLANNING FOR STREETS AND HIGHWAYS

The Year 2015 Transportation Plan is developed as a system level plan addressing regional transportation problems within the study area identified by means of transportation planning models. It primarily identifies the major facilities that need to be built or widened in order to meet the additional capacity needs through the Year 2015. The new or widened facilities identified in the plan will be subject to further detailed engineering, environmental, social and economic analysis before reaching the final construction phase.

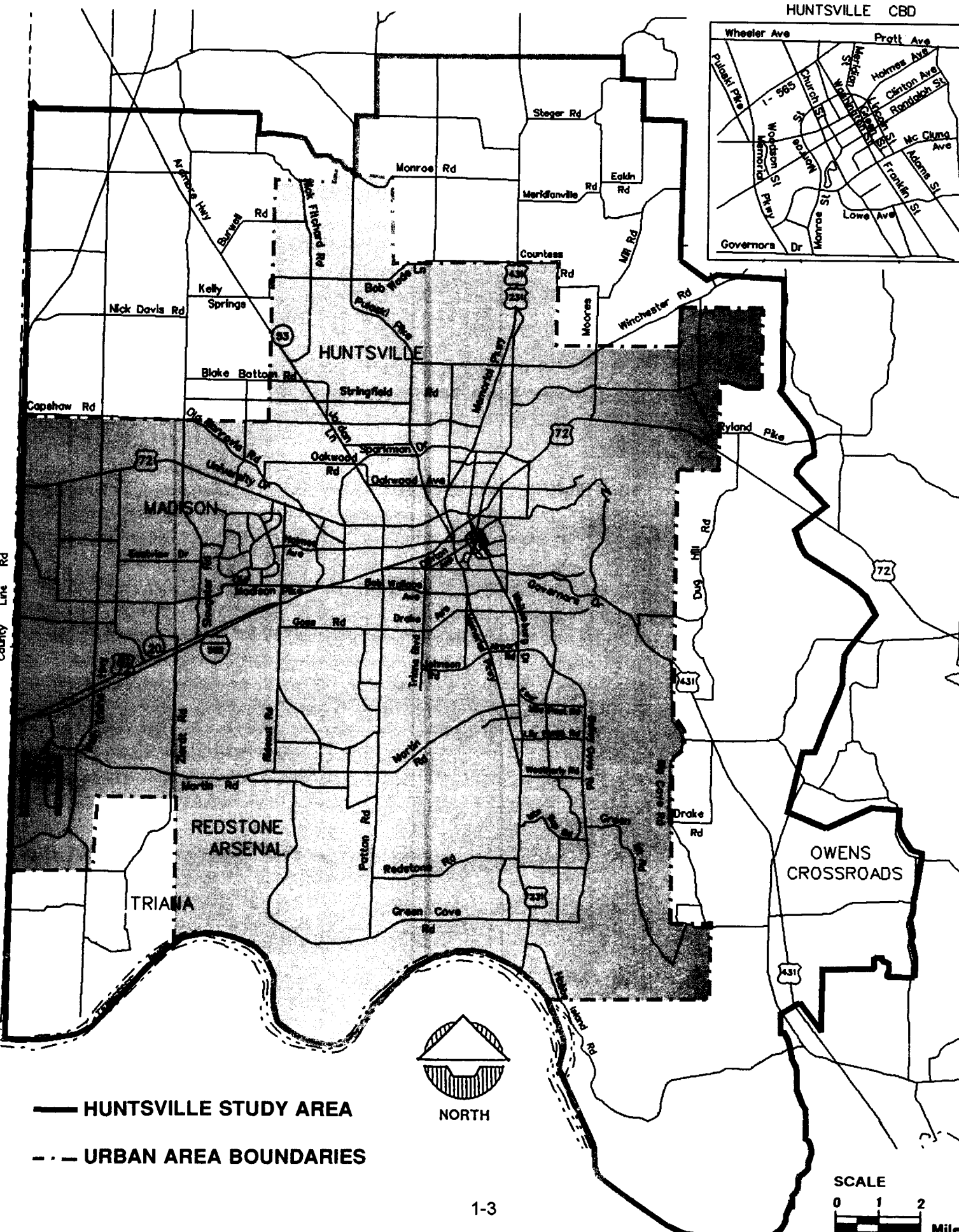
MULTIMODAL CONCEPT

According to ISTEA, the plan must include both long-range and short-range strategies/actions that lead to the development of an integrated intermodal transportation system that facilitates the efficient movement of people and goods. Because the nation's transportation system developed mode-by-mode, little attention was given to how these modes would interconnect. We began first with seaports and canals, then built railroads, followed by a highway system and finally a network of airports. Intermodal transportation links these modes together. Intermodalism attempts to help all modes work better by providing the cross-modal connections our transportation system lacks.

GEOGRAPHIC COVERAGE

The study area of the long-range transportation plan (as opposed to the "urban area") includes land that is expected to become more densely settled in urban fashion in coming years. The Census Bureau is responsible for delineating the urbanized areas. Figure 1.1 depicts the 1990 urbanized area and study area boundaries.

FIG. 1.1: HUNTSVILLE STUDY AREA AND URBAN AREA BOUNDARIES



CHAPTER II

TRAVEL DEMAND MODEL

The travel demand model is developed to predict future traffic on the street and highway system. The modeling process follows the traditional four-step travel forecasting method; trip generation, trip distribution, mode split and traffic assignment.

1. Trip Generation--Estimates the number of trips produced by and attracted to each zone based upon zonal estimates of urban activity. The Huntsville study area is divided into 264 traffic analysis zones;
2. Trip Distribution--Determines where the trips generated in each zone will go, i.e., how trips from each zone will be distributed among all the zones in the study area;
3. Mode Split--Trips are split among the various modes of travel. In the Huntsville urban area the model focuses primarily on vehicle trips; and
4. Traffic Assignment--Predicts the streets the trips will take when moving from one zone to another.

NETWORK BUILDING

One of the first steps in the modeling process is network file development. The network file is an abstract, computerized representation of the actual street network.

The network file is created by transferring a street map to a form that can be processed by computer programs. The street network includes almost all streets that are classified as collector or higher category. At each intersection, node numbers are assigned which are used to define individual "links" of the street system. The length, carrying capacity, and average speed of each link in the network is coded as part of the street network description. Zones are connected to the street system by imaginary lines through which the trips produced in or attracted to each zone may gain access to the street system. This entire abstract description of the actual street system is coded, entered into the computer, and becomes the network file for the Huntsville area.

TRIP GENERATION

Trip generation models translate estimates of land use activity into numbers of trips. Given estimates of dwelling units and employment in a zone, trip generation models predict the number of trips that will be produced by that zone and the number of trips that will be attracted to that zone from all other zones in the study area.

TRIP DISTRIBUTION

Trip generation identifies the number of trip ends--both productions and attractions--for each zone. Trip distribution is the process by which the trips originating in one zone are distributed to other zones in the study area. The output is a set of tables (trip tables) that show the travel flow between each pair of zones.

GRAVITY MODEL

In the gravity model, the number of trips between two areas is directly proportional to the amount of activity in the areas--represented by trip generation numbers--and inversely proportional to the separation between the areas--represented as a function of travel time. In other words, areas with large amounts of activity will tend to exchange more trips, and areas farther from each other will tend to exchange fewer trips.

The effect of travel time on the exchange of trips between two zones is represented by a friction factor. Simply stated, a friction factor represents the level of accessibility between each zone, with higher values meaning greater accessibility and lower travel time. To calibrate the trip distribution model, these friction factors are developed, tested, and then modified until the simulated exchange of trips between two zones compares closely to observed trips between zones. When the comparison is within acceptable limits, the gravity model can be used to distribute trips among zones for the forecast year 2015 using the numbers of trips projected by the trip generation model as input.

TRAFFIC ASSIGNMENT

In trip generation, the number of trips by zone were forecasted. Those forecasted trips were then given destinations by trip distribution. Assigning these trips to specific routes and establishing traffic volumes is the last phase of the forecasting process--trip assignment.

ASSIGNMENT CALIBRATION AND PROJECTION

After the network file is developed, the existing trip table showing the flow of trips between each pair of zones in the study area is used to assign base year trips to the base year network. Generally speaking, trips between any two zones will follow the path (street links) between the zones that requires the least amount of time to travel. In determining time to go from one zone to another, delays due to congestion are taken into consideration. This assignment process will produce a simulated computer version of base year (1992) traffic volumes. These volumes are then compared to actual counts of traffic and adjustments are made until the model produces an assignment reasonably close to actual volumes.

After an acceptable comparison of simulated to actual volumes has been achieved, the future trip table from the trip distribution phase may be assigned. New streets or improvements to existing streets may be added to the network where the existing system appears overloaded. This process of building future street networks, assigning traffic, and analyzing performance is discussed in the following chapter.

The models are calibrated with the base year (1992) data to duplicate travel for the base year and then used to forecast the Year 2015 trips and test demands on alternative transportation systems. Future travel depends upon the demographic and socioeconomic characteristics of the study area as well as available transportation facilities. The projected daily trips for the base year and Year 2015 are provided in the following table. Six different categories of trip purposes are projected (see Table 2.1 and Figure 2.1):

1. Home based work trips represent trips with one end at home and the other at the work place.
2. Home based other trips are those with one end at the residence and the other end at a place other than work.
3. Non-home based trips include those originating away from home, such as from work to another place of business.
4. Local-external are trips that have one end inside and one end outside the study area.

5. External-external trips are those that pass through the study area but do not have a destination inside the study area. They are estimated as a percentage of local-external trips.
6. Truck and taxi trips are estimated as a percentage of total internal trips.

TABLE 2.1: DAILY TRIPS GENERATED, 1992 AND 2015

TRIP TYPE	TRIPS PER DAY 1992	TRIPS PER DAY 2015	% CHANGE
Home Based Work	126,719	176,995	+39.6
Home Based Other	305,277	426,379	+39.6
Non-Home Based	144,001	201,125	+39.6
Truck & Taxi	88,700	123,887	+39.6
Local-External	120,117	240,235	+100.0
Through	6,505	13,011	+100.0
TOTAL AREA TRIPS	791,319	1,181,632	+49.3

FIGURE 2.1: ESTIMATES OF TRIPS BY PURPOSE, 1992 AND 2015

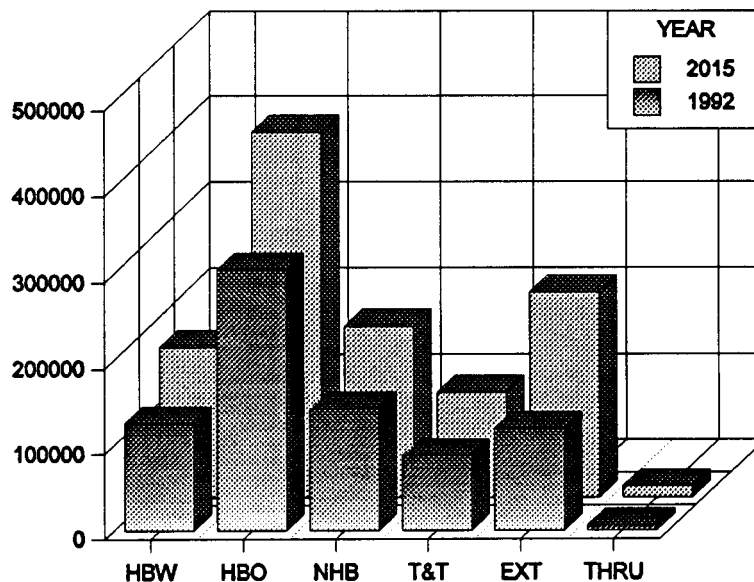
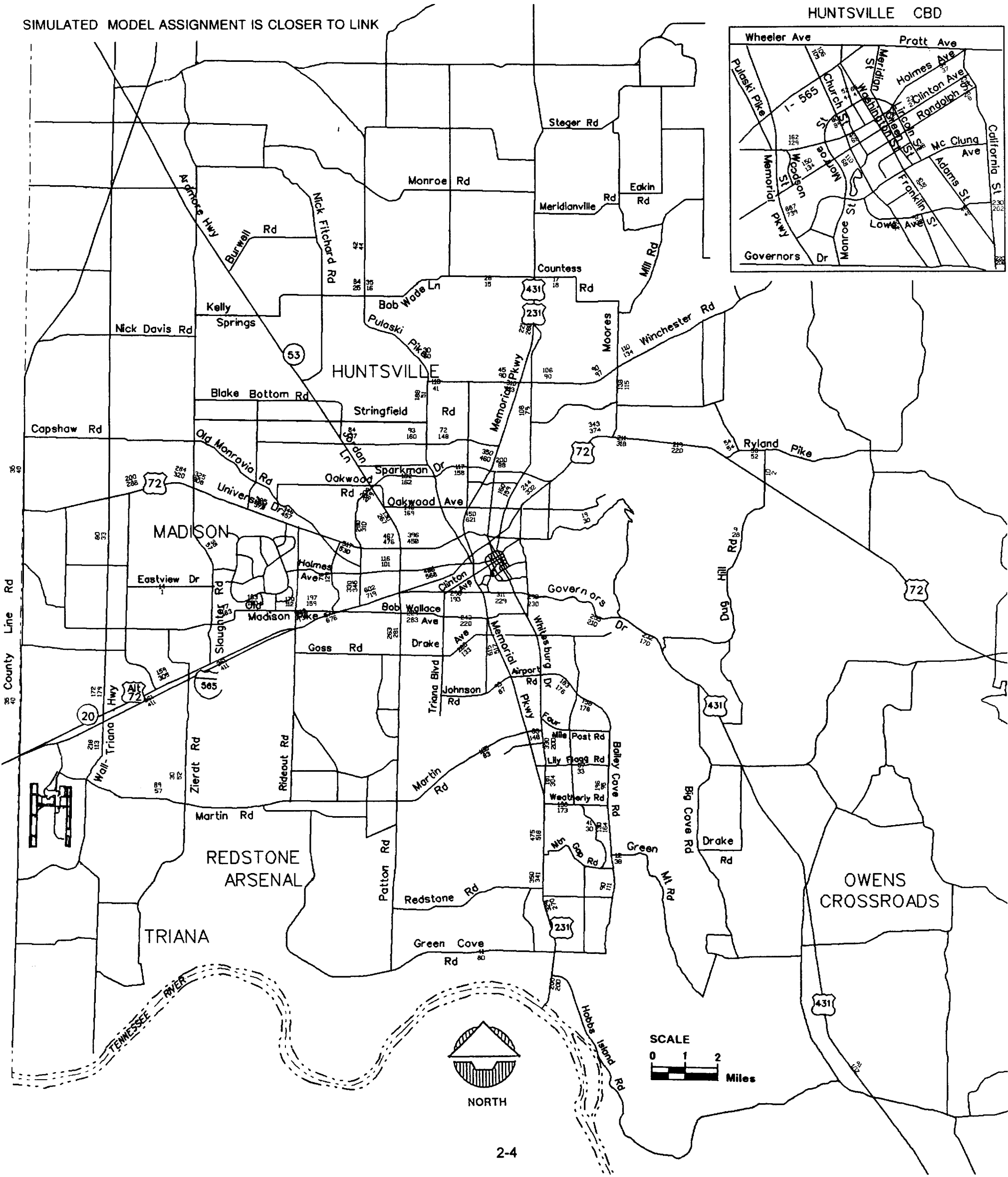


Figure 2.2 provides a comparison of simulated traffic volumes produced by the model and actual traffic counts for the base year.

FIG. 2.2: COMPARISON OF BASE
YEAR ACTUAL COUNTS AND
SIMULATED MODEL ASSIGNMENT

SIMULATED MODEL ASSIGNMENT IS CLOSER TO LINK

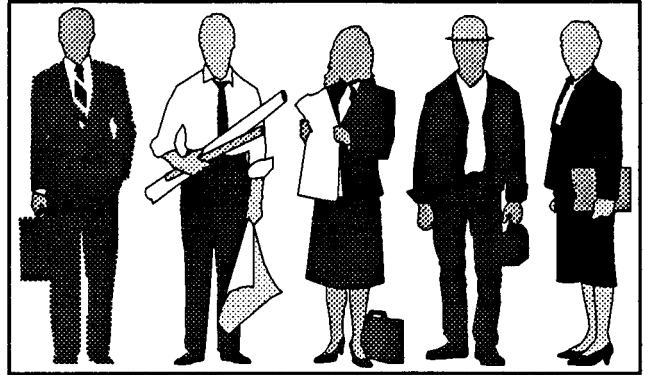


CHAPTER III

DEMOGRAPHICS

The travel demand model assumes that trip productions are based on estimates and forecasts of occupied housing units and that trip attractions are based on housing units and employment estimates and forecasts.

Forecast study areas were defined and used to depict the base year and future year socioeconomic data. Of the twenty-eight (28) study areas shown in Figure 3.1, twenty (20) are included within the Huntsville Urban Transportation (MPO) Area. Names were given to the forecast study areas for purposes of identification only. However, some of the study area names also represent names of incorporated areas or places. The study area boundaries do not necessarily coincide with boundaries of these places or incorporated areas.



The base year for the socioeconomic factors used in the model is 1992. Occupied housing for 1992 was estimated in part using 100% housing totals at the census block level from the 1990 Census. These data were aggregated to traffic zones and study areas and supplemented with estimates of added housing from April 1, 1990 through December 31, 1992, for each zone and area. Finally, estimates of occupancy were made by zone and area (primarily based on 1990 occupancy data).

The forecast period is 1993-2015 for all forecast data. The forecasts were constructed using statistical techniques and were made on an area-wide basis first, and then were made for the study areas and traffic zones, based on zoning, historical patterns and judgment.

First, area-wide total employment was forecasted using annual estimates of total employment produced by the Bureau of Economic Analysis, U.S. Department of Commerce. Employment data from the 1990 Census issued through the Census Transportation Planning Program was then used to assist in constructing employment forecasts for study areas and traffic zones.

Subsequently, area-wide future total housing (and occupied housing) was derived from area-wide total employment and was based on many factors. Housing (and occupied housing) estimates for study areas and traffic zones were then based on additional factors such as zoning, historical patterns and judgment.

The following tables 3.1 through 3.3 include estimates and forecasts of total employment, total housing, occupied housing and population by forecast study area. Separate totals are included for the Huntsville Urban Transportation (MPO) Area.

PROJECTION STUDY AREAS

FIGURE 3.1

3-2

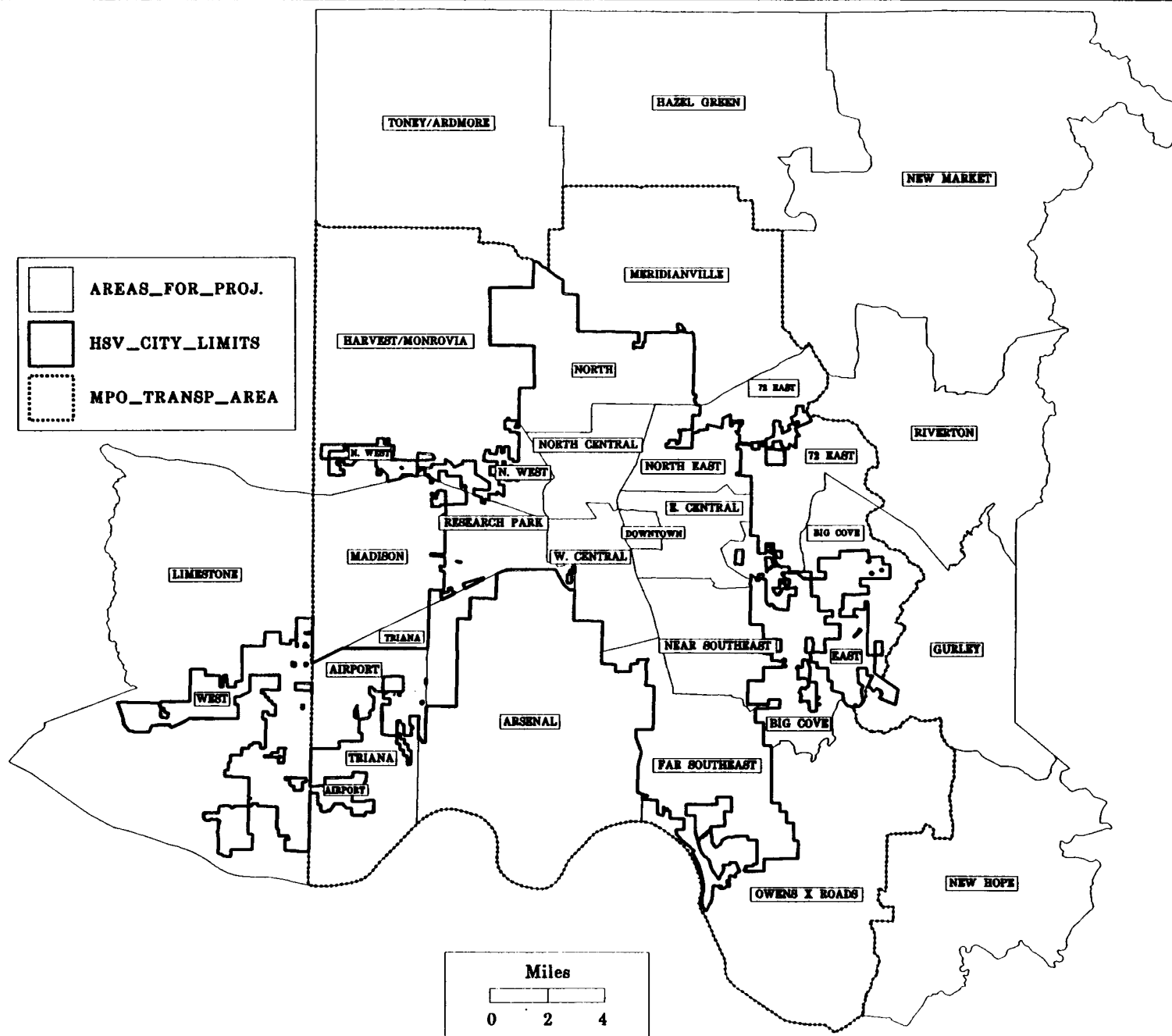


TABLE 3.1: EMPLOYMENT BY STUDY AREA

<u>STUDY AREA:</u>	<u>1992 ESTIMATED EMPLOYMENT</u>	<u>2015 PROJECTED EMPLOYMENT</u>
NORTH	1,205	3,312
NORTH CENTRAL	9,866	10,573
NORTHEAST	6,901	12,714
DOWNTOWN	20,490	23,995
EAST CENTRAL	10,200	11,025
EAST	25	2,105
NEAR SOUTHEAST	4,081	5,093
FAR SOUTHEAST	7,070	10,418
WEST CENTRAL	19,370	21,494
RESEARCH PARK	28,981	39,735
NORTHWEST	1,992	5,522
AIRPORT	15,884	24,004
WEST	<u>111</u>	<u>4,444</u>
HUNTSVILLE CITY TOTALS	126,175	174,434
LIMESTONE	404	2,483
MADISON	3,093	11,669
HARVEST/MONROVIA	837	3,436
MERIDIANVILLE	958	2,258
72 EAST	2,157	3,706
BIG COVE	442	2,131
OWENS CROSS ROADS	714	2,020
ARSENAL	24,673	24,673
TRIANA	4,010	5,049
TONEY/ARDMORE	71	586
HAZEL GREEN	606	3,205
NEW MARKET	208	947
RIVERTON	47	627
GURLEY	438	948
NEW HOPE	<u>200</u>	<u>1,110</u>
REMAINDER TOTALS	38,860	64,847
GRAND TOTALS	165,035	239,282
1990 MPO STUDY AREA	162,948	224,932

Sources: US Census Bureau, Bureau of Economic Analysis and the Huntsville Planning Division

**TABLE 3.2: HOUSING AND POPULATION ESTIMATES
BY STUDY AREA (1992)**

<u>STUDY AREAS:</u>	1992 ESTIMATE TOTAL <u>HOUSING UNITS</u>	1992 ESTIMATE TOTAL <u>HOUSEHOLDS</u>	1992 ESTIMATE HOUSEHOLD <u>POPULATION</u>	1992 ESTIMATE TOTAL <u>POPULATION</u>
NORTH	2,070	1,978	5,989	5,989
NORTH CENTRAL	13,436	12,634	32,786	32,888
NORTHEAST	4,150	3,885	10,114	11,883
DOWNTOWN	1,597	1,496	2,886	3,680
EAST CENTRAL	8,958	8,464	19,430	19,503
EAST	351	336	1,007	1,007
NEAR SOUTHEAST	7,502	7,191	17,400	17,552
FAR SOUTHEAST	10,631	10,161	27,751	27,753
WEST CENTRAL	15,907	14,179	31,691	32,254
RESEARCH PARK	2,411	2,216	4,403	4,482
NORTHWEST	2,461	2,064	4,195	5,049
AIRPORT	808	724	1,455	1,455
WEST	<u>100</u>	<u>97</u>	<u>347</u>	<u>347</u>
HUNTSVILLE CITY TOTALS	70,382	65,424	159,453	163,841
LIMESTONE	1,146	1,076	2,852	2,852
MADISON	8,513	7,743	19,499	19,576
HARVEST/MONROVIA	5,416	5,153	14,617	14,617
MERIDIANVILLE	3,164	3,036	8,737	8,737
72 EAST	1,814	1,760	4,992	4,992
BIG/LITTLE COVES	811	767	1,966	1,966
OWENS X ROADS	1,562	1,473	3,871	3,882
ARSENAL	1,156	1,048	3,605	4,879
TRIANA	818	755	1,895	1,895
TONEY/ARDMORE	2,708	2,544	7,108	7,121
HAZEL GREEN	3,242	3,073	8,646	8,646
NEW MARKET	2,082	1,984	5,531	5,531
RIVERTON	998	943	2,646	2,646
GURLEY	1,118	1,055	2,911	2,911
NEW HOPE	<u>1,554</u>	<u>1,457</u>	<u>3,738</u>	<u>3,738</u>
REMAINDER TOTALS	36,102	33,867	92,613	93,988
GRAND TOTALS	106,484	99,291	252,066	257,829
1990 MPO STUDY AREA	93,536	87,061	218,287	224,037

Sources: US Census Bureau and the Huntsville Planning Division

**TABLE 3.3: HOUSING AND POPULATION PROJECTIONS
BY STUDY AREA (2015)**

<u>STUDY AREAS:</u>	2015 PROJECTED TOTAL <u>HOUSING UNITS</u>	2015 PROJECTED TOTAL <u>HOUSEHOLDS</u>	2015 PROJECTED HOUSEHOLD <u>POPULATION</u>	2015 PROJECTED TOTAL <u>POPULATION</u>
NORTH	3,452	3,279	9,309	9,309
NORTH CENTRAL	13,603	12,788	30,937	31,039
NORTHEAST	4,583	4,322	10,510	12,279
DOWNTOWN	1,610	1,508	2,647	3,441
EAST CENTRAL	9,052	8,553	18,173	18,246
EAST	4,534	4,357	12,475	12,475
NEAR SOUTHEAST	8,625	8,248	18,809	18,961
FAR SOUTHEAST	11,859	11,328	28,896	28,898
WEST CENTRAL	15,980	14,246	29,386	29,949
RESEARCH PARK	3,041	2,796	5,070	5,149
NORTHWEST	4,240	3,584	6,842	7,696
AIRPORT	2,222	1,996	3,668	3,668
WEST	<u>3,478</u>	<u>3,269</u>	<u>8,848</u>	<u>8,848</u>
HUNTSVILLE CITY TOTALS	86,279	80,273	185,571	189,959
LIMESTONE	5,314	4,989	11,711	11,711
MADISON	17,831	16,308	37,242	37,319
HARVEST/MONROVIA	11,822	11,248	28,552	28,552
MERIDIANVILLE	6,221	5,969	15,370	15,370
72 EAST	3,129	3,034	7,677	7,677
BIG/LITTLE COVES	2,193	2,074	4,688	4,688
OWENS X ROADS	3,075	2,899	6,743	6,754
ARSENAL	1,156	1,048	3,287	4,561
TRIANA	1,318	1,217	2,685	2,685
TONEY/ARDMORE	5,327	5,004	12,466	12,479
HAZEL GREEN	7,243	6,866	17,237	17,237
NEW MARKET	3,741	3,566	8,858	8,858
RIVERTON	2,248	2,125	5,316	5,316
GURLEY	2,368	2,235	5,488	5,488
NEW HOPE	<u>2,687</u>	<u>2,520</u>	<u>5,699</u>	<u>5,699</u>
REMAINDER TOTALS	75,673	71,101	173,019	174,394
GRAND TOTALS	161,951	151,374	358,589	364,352
1990 MPO STUDY AREA	129,545	120,800	282,966	288,716

HIGHWAY ELEMENT

The plan development process involved building and testing alternate street plans until an acceptable plan evolved for adoption. This process basically followed three steps:

1. Alternate Plan Development or Modification;
2. Assignment of Year 2015 Traffic; and
3. Alternate Plan Evaluation Based Upon Future Traffic Assignment.

This procedure was repeated for each alternate considered. The selected plan includes expansion of arterial and collector systems and upgrading some arterials to expressway and constructing new freeways and expressways.

THE ADOPTED HIGHWAY PLAN

The Huntsville Long Range Highway Plan is shown in Figure 4.1 and Table 4.1. Major projects contained in the adopted plan include the following:

1. An interchange is to be built at I-565, U.S. 72 and Maysville Road, to High Mountain Road. U.S. 72 is to be improved as a six-lane expressway from High Mountain Road to Moores Mill Road and as a four-lane expressway from Moores Mill Road to the Northern Bypass with interchanges at High Mountain Road, Moores Mill Road, and the Northern Bypass.
2. Memorial Parkway is to be improved as a four-lane, limited access expressway with service roads from Max Luther Dr. to the Northern Bypass and from Martin Road to south of the Southern Bypass with overpasses at Max Luther Drive, Sparkman Drive, Mastin Lake Rd., Winchester Road, Martin Rd., Lily Flagg Rd., Weatherly Rd and Whitesburg Dr., Mountain Gap Rd., Hobbs Rd., and Green Cove Road.
3. The Northern Bypass is recommended as a four-lane arterial with enough right-of-way for a 4-lane expressway in the future. The project limits are from Ardmore Highway (State Highway 53) through Bob Wade Lane and Homer Nance Road to U.S. 72 East. Existing roads would be upgraded between State Highway 53 (Ardmore Highway) and west of U.S. 231, and between Winchester Road and Jordan Road. New construction would take place between U.S. 231 and Winchester Road, and between Jordan Road and U.S. 72 East.
4. The Southern Bypass is recommended as a four-lane limited access expressway from Rideout Road to South Memorial Parkway at Hobbs Island Road. Weatherly Road is to be extended from Memorial Parkway to the Southern Bypass as a five-lane collector.
5. Hughes Road in Madison is recommended as an improvement from a two-lane to a 3-5-lane arterial from Old Madison Ave. to Highway 72 West.
6. Old Madison Pike is to be improved as a four-lane arterial from Thornton Industrial Park to Wall Triana Hwy.

A street map of the downtown area of St. Louis, Missouri. The map shows a grid of streets with labels for various streets including Wheeler Ave, Pratt Ave, Market St, Main St, Chestnut St, Olive St, Franklin St, Washington St, Adams St, Jackson St, and Governor St. A small area in the center is labeled 'Downtown St. Louis'.

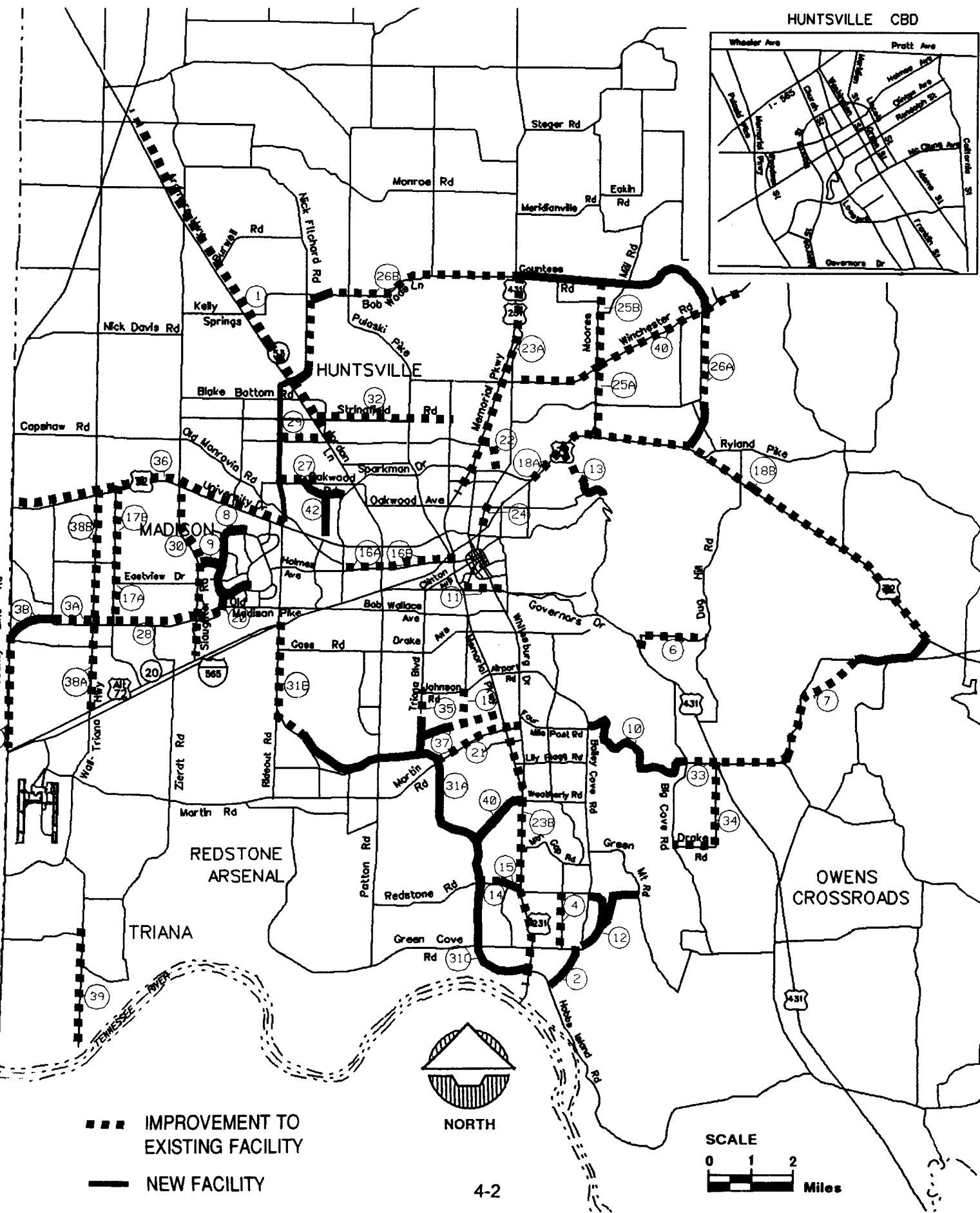


TABLE 4.1: PROPOSED YEAR 2015 HIGHWAY PLAN

Map #	Project	From	To	Length (Mi)	Facility Type	Existing Lanes	Proposed Lanes
1	Ardmore Highway (AL 53)	Mastin Lake Rd.	Study Area	9.0	Arterial	2	5
2	Bailey Cove Rd. Extension	Green Cove Rd.	Hobbs Island Rd	1.4	Arterial	0	5
3A	Browns Ferry Rd.	Sullivan St	Balch Rd.	1.0	Arterial	2	3
3B	Browns Ferry Ext.	Chapel Rd.	County Line Rd.	1.0	Arterial	0	3
4	Chaney Thompson Rd	Hobbs Rd	Green Cove Rd	1.1	Collector	2	3
5	County Line Rd.	Mill Rd.	SR 20	2.6	Arterial	2	4
6	Dug Hill Rd	King Drake Rd	US 431	1.5	Collector	2	3
7	Eastern Bypass	U.S. 72 East	Old U.S. 431	6.5	Arterial	0	4
8	Explorer Blvd.	Explorer Way	East of Mariner Way	1.3	Collector	0	4
9	Farrow Rd.	Explorer Blvd.	Slaughter Rd.	0.5	Collector	0	4
10	Four Mile Post Ext.	Bailey Cove Rd.	Big Cove Rd.	3.4	Collector	0	3
11	Governors Dr.	Memorial Pkwy.	California St.	1.1	Arterial	4	7
12	Green Mtn./Shawdee Rd. Col.	Bailey Cove Rd.	Shawdee Rd.	1.5	Collector	0	3
13	High Mtn Rd	US 72	Bankhead Pkwy	1.5	Collector	0	2
14	Hobbs Rd./Redstone Rd.	Redstone-Bell Mtn.	Southern Bypass	0.8	Collector	2	5
15	Hobbs Rd. Ext.	Memorial Pkwy.	Redstone Rd.	0.4	Collector	0	5
16A	Holmes Avenue	Jordan Lane	Sparkman Dr.	1.0	Collector	2	3
16B	Holmes Avenue	Jordan Lane	Woodson St.	2.0	Collector	2	3
17A	Hughes Road	Mill Road	Madison Avenue	1.05	Arterial	2	4

Map #	Project	From	To	Length (Mi)	Facility Type	Existing Lanes	Proposed Lanes
17B	Hughes Road	Madison Avenue	Hwy. 72 West	2.6	Arterial	2	3
18A	I-565/U.S. 72 East	Maysville Rd	High Mtn Rd.	1.1	Freeway	4	6
18B	I-565/U.S. 72 East	High Mtn Rd.	Eastern Bypass	9.0	Expressway	4	4
19	Leeman Ferry Rd. Ext.	Johnson Rd.	Vermont Rd.	0.5	Collector	0	3
20	Mariner Way	Old Madison Pike	Explorer Blvd.	1.0	Collector	0	4
21	Martin Rd	Whitesburg Dr.	Patton Rd.	3.9	Arterial	2	4
22	Mastin Lake Rd	US 231	US 72	0.8	Collector	2	2
23A	Memorial Pkwy.	Oakwood Ave.	Northern Bypass	5.5	Expressway	4	4
23B	Memorial Pkwy.	Martin Rd	Hobbs Island Rd	5.6	Expressway	4	4
24	Meridian St	Oakwood Ave	Pratt Ave	1.1	Arterial	2	5
25A	Moores Mill Rd.	U.S. 72 East	Winchester Rd	1.7	Arterial	2	5
25B	Moores Mill Rd.	Winchester Rd	Northern Bypass	2.0	Arterial	2	5
26A	Northern Bypass	U.S. 231 along Homer Nance Rd.	U.S. 72 East	9.0	Arterial	2	4
26B	Northern Bypass	SR 53 along Nick Fitchard Rd., Bob Wade Ln.	U.S. 231	7.0	Arterial	2	4
27	Oakwood Rd.	Adventist Blvd	Rideout Rd.	0.7	Collector	2	4
28A	Old Madison Pike	Madison City Limits	Miller Blvd.	0.25	Arterial	2	4
28B	Old Madison Pike	Miller Blvd	Cambridge Dr.	0.85	Arterial	2	3
28C	Old Madison Pike	Thornton Ind Park	Madison City Limits	0.3	Arterial	2	4
28D	Old Madison Pike	Cambridge Dr.	Sullivan St	0.95	Arterial	2	4

Map #	Project	From	To	Length (Mi)	Facility Type	Existing Lanes	Proposed Lanes
29	Plummer Rd.	Ardmore Hwy (U.S. 53)	Rideout Rd.	1.0	Collector	2	3
30	Slaughter Road	I-565	U.S. 72 West	5.0	Collector	2	5
31A	Southern Bypass	Martin Rd	Weatherly Rd Ext	2.0	Expressway	0	4
31B	Southern Bypass	I-565	Martin Rd	6.5	Expressway	4	4
31C	Southern Bypass	Weatherly Rd Ext	US 231	4.5	Expressway	0	4
32	Stringfield Rd.	Blue Spring Rd.	Jordan Ln.	3.25	Collector	2	3
33	Sutton Rd.	U.S. 431	Old Big Cove Rd.	0.7	Collector	2	3
34	Taylor Rd/Terry Drake Rd	Sutton Rd	Old Big Cove Rd	3.0	Collector	2	3
35	Triana Blvd Ext	Existing	Southern Bypass	1.0	Collector	0	2
36	U.S. 72/University Dr	Rideout Rd	County Line Rd	6.5	Arterial	4	7
37	Vermont Rd Ext.	Leeman Ferry Ext	Triana Blvd Ext	0.5	Collector	0	2
38A	Wall Triana Hwy. (Sullivan St)	Highway 20	Mill Road	1.5	Collector	2	5
38B	Wall Triana Hwy.	Mill Road	Hwy 72 West	3.6	Collector	2	3
39	Wall Triana Hwy.	East Gate Dr	Tennessee River	4.5	Arterial	2	5
40	Weatherly Rd. Ext.	Memorial Pkwy.	Southern Bypass	1.0	Collector	0	5
41	Winchester Rd.	Meridian St.	Bell Factory Rd	6.0	Arterial	2	5
42	Wynn Dr Ext	No. of University Dr.	Adventist Blvd	0.9	Collector	0	5

7. Browns Ferry Road is to be improved to a five-lane arterial from Wall Triana Highway to Balch Road and new construction from Balch Road to County Line Road.
8. County Line Road is to be improved as a four-lane arterial from Mill Road to SR 20.
9. Winchester Road is to be improved as a five-lane arterial from Meridian Street to Bell Factory Road.
10. Eastern Bypass is recommended as a four-lane arterial with enough right-of-way for a 4-lane expressway in the future. The project limits are from U.S. 72 East to U.S. 431 with new construction from U.S. 72 East to Old U.S. 431.
11. Governors Drive is recommended as a seven-lane section from Memorial Parkway to California Street.
12. University Drive is recommended as a seven-lane section from Rideout Road to County Line Road.

Projects deleted from the Year 2005 Transportation Plan:

1. Triana Boulevard Extension from Holmes Avenue to University Drive.
2. Jordan Lane widening from I-565 to University Drive.

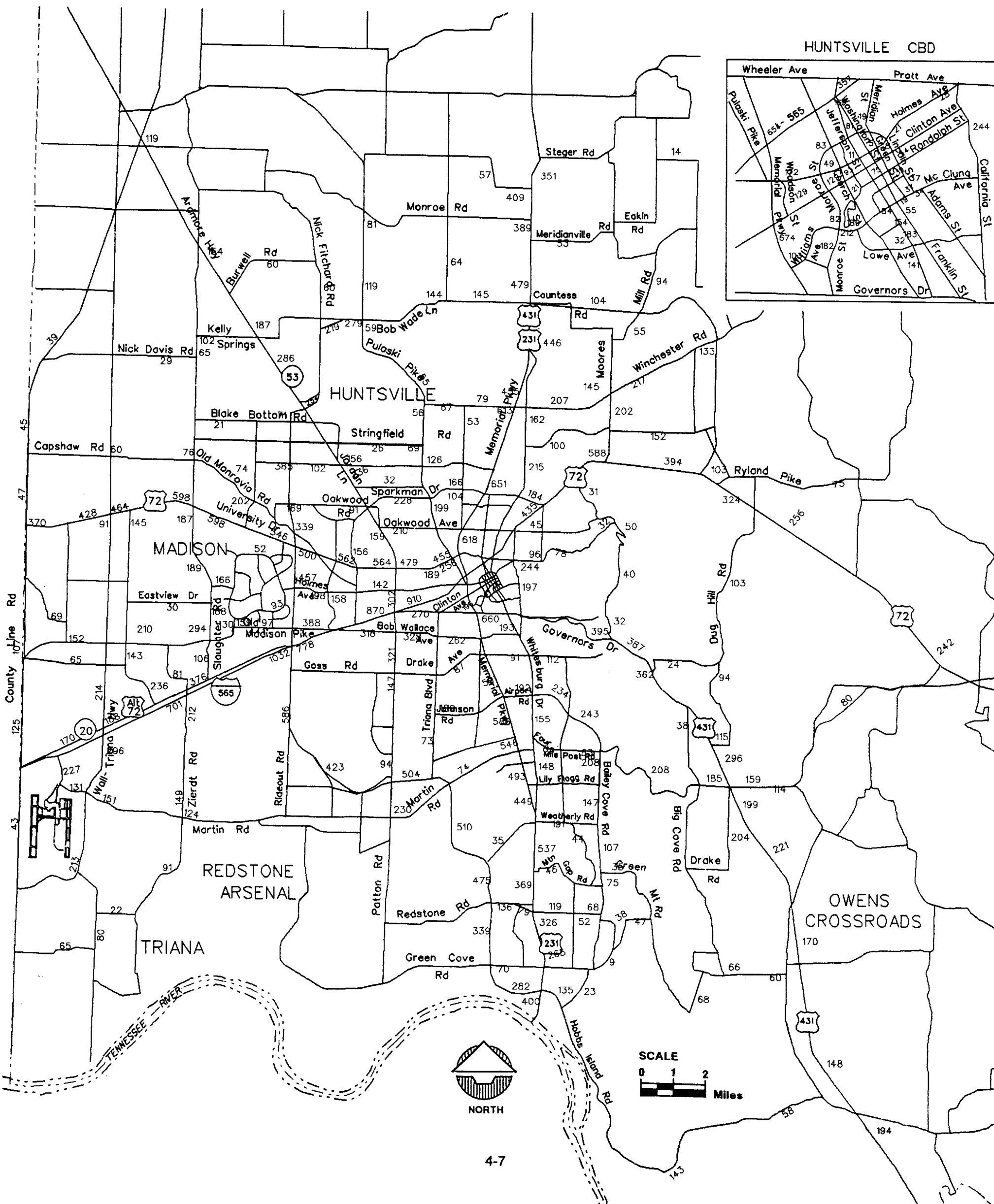
EVALUATION OF THE ADOPTED PLAN AND "NO BUILD" ALTERNATIVE

Future road needs are determined by assigning the forecast trips to a road network with the model structure developed and validated for the base year, or known conditions. The first step in evaluating future road needs is to assign the trips to the "Existing and Committed" or E+C system. The E+C system is the system of roads now open to traffic plus those recently opened, currently under construction or under contract for preliminary engineering. In the HATS area, these additional projects include:

- Hughes Road extension to SR-20
- Widening of Winchester Rd. between Meridian St and Moores Mill Rd
- Widening of Dug Hill Rd
- Four Mile Post Extension from Bailey Cove to Sutton Rd
- Widening of Stringfield Rd from Blue Spring Rd to Jordan Lane
- Adventist Blvd / Wynn Drive projects
- Widening of Old Madison Pike
- Widening of Holmes Ave
- Widening of Meridian St from Oakwood Ave to Pratt Ave

The next step is to evaluate alternate plans. The evaluation is based upon the assignment of the year 2015 traffic to the existing and committed street system and to other network plans (Figure 4.2 displays the traffic assignment for the build alternate). The evaluation is undertaken for each type of highway facility (a) interstate, (b) freeway (c) expressway, (d) principal arterial, (e) minor arterial, and (f) collector. For each

FIG. 4.2: YEAR 2015 TRAFFIC ASSIGNMENT



type of facility, the following data are summarized for each network:

1. Major Street Mileage - Linear miles of street;
2. Lane Miles - Major street mileage multiplied by the number of lanes in the street;
3. Vehicle Miles - The number of vehicle miles traveled on each system;;
4. Vehicle Hours - The number of vehicle hours of travel on each system;
5. Average Network Speed - The average speed on each system.

As shown in Table 4.2, the impact of the projected growth on the E+C system would be intolerable by today's service standards. While the number of vehicle-miles driven in the study area each day would increase from 5 million in 1992 to 8.7 million in 2015, the number of lane miles to accomodate this traffic would only be about 131 miles greater than today. Table 4.2 clearly outlines the advantages of the adopted plan, especially when observing the reduction in vehicle travel time and increase in network speed. The ultimate result of this growth and accompanying congestion will necessitate the need for additional highway capacity throughout the HATS planning area.

TABLE 4.2: COMPARISON OF ALTERNATES

	Year 1992 Assignment Existing Network	Year 2015 Assignment No Build Scenario ALT 1	Year 2015 Assignment Adopted Plan ALT 2
Total Network Distance (mi.)	982	1,001	1,081
Lane Miles (mi.)	3,005	3,136	3,805
Total Vehicle Distance (mi.)	5,048,216	8,699,063	8,702,003
Total Network Time (hrs)	73	121	90
Total Vehicle Travel Time (hrs)	313,418	1,279,526	698,227
Average Network Speed (mph)	16.1	6.8	12.5

VOLUME/CAPACITY PROJECTIONS FOR THE NATIONAL HIGHWAY SYSTEM

Table 4.3 indicates the volume to capacity (V/C) ratios as projected in the 2015 build alternate for major corridors on the National Highway System. Traffic on Memorial Parkway (US 231) is projected to increase significantly through the Year 2015 and will likely exceed capacity between Governors Drive and Airport Road. Much of University Drive (US 72) will also experience congestion problems as growth continues in the western part of the study area. I-565 is not projected to experience congestion problems except for segments around Rideout Road. Congestion will likely persist along US 431 and Governors Drive.

VOLUME CAPACITY PROJECTIONS FOR OTHER ROADWAYS

The Surface Transportation Program (STP) includes all roads not on the NHS. A number of arterial and collector roads in the Huntsville urban area are included in this category. Table 4.4 includes the V/C ratio for a number of local roadways in the study area.

**TABLE 4.3: VOLUME / CAPACITY RATIOS FOR NATIONAL HIGHWAY SYSTEM
1992 AND 2015**

FUNCTIONAL CLASS	LOCATION	1992 CAPACITY	1992 ADT	1992 V/C RATIO	2015 CAPACITY	2015 ADT	2015 V/C RATIO
ARTERIAL	I-565						
	EAST OF WALL TRIANA HWY	102,000	36,100	0.35	102,000	70,100	0.69
	WEST OF RIDEOUT RD	102,000	53,200	0.52	102,000	103,200	1.01
	EAST OF RIDEOUT RD	136,000	57,400	0.42	136,000	77,800	0.57
	EAST OF SPARKMAN DR	136,000	60,200	0.44	136,000	87,000	0.64
	EAST OF GOVERNORS DR	136,000	48,600	0.36	136,000	67,500	0.50
	WEST OF 72 E	68,000	24,400	0.36	68,000	43,500	0.64
ARTERIAL	US 72 E						
	EAST OF INTERSTATE 565	23,000	34,300	1.49	50,000	57,400	1.15
	WEST OF MOORES MILL RD	23,000	33,500	1.46	50,000	58,900	1.18
	EAST OF MOORES MILL RD	23,000	22,000	0.96	50,000	39,400	0.79
ARTERIAL	US 72 W						
	EAST OF HUGHES RD	23,000	20,000	0.87	48,000	59,800	1.25
	WEST OF SLAUGHTER RD	23,000	32,000	1.39	48,000	58,700	1.22
	EAST OF SLAUGHTER RD	23,000	30,800	1.34	48,000	59,800	1.25
	WEST OF ENTERPRISE DR	23,000	37,000	1.61	48,000	54,600	1.14
	EAST OF ENTERPRISE DR	23,000	45,700	1.99	48,000	52,100	1.09
	WEST OF SPARKMAN DR	48,000	53,800	1.12	48,000	56,200	1.17
	WEST OF JORDAN LN	48,000	47,600	0.99	48,000	56,200	1.17
	EAST OF JORDAN LN	48,000	45,000	0.94	48,000	47,900	1.00
ARTERIAL	US 231 S						
	SOUTH OF GOVERNORS DR	75,000	73,900	0.99	75,000	67,600	0.90
	NORTH OF AIRPORT RD	75,000	67,800	0.90	75,000	62,200	0.83
	SOUTH OF AIRPORT RD	23,000	51,700	2.25	75,000	58,700	0.78
	SOUTH OF WEATHERLY RD	23,000	47,500	2.07	75,000	53,700	0.72
	NORTH OF REDSTONE RD	23,000	35,000	1.52	75,000	36,900	0.49
	SOUTH OF HOBBS RD	23,000	27,000	1.17	75,000	32,700	0.44
ARTERIAL	US 231 N						
	NORTH OF MERIDIAN ST	23,000	22,100	0.96	75,000	44,700	0.60
	SOUTH OF WINCHESTER RD	23,000	28,000	1.22	75,000	61,300	0.82
	NORTH OF MASTIN LAKE RD	23,000	31,000	1.35	75,000	65,100	0.87
ARTERIAL	US 431						
	WEST OF MEMORIAL PKWY	44,000	22,900	0.52	44,000	27,700	0.63
	EAST OF MEMORIAL PKWY	26,500	30,500	1.15	48,000	34,700	0.72
	EAST OF CALIFORNIA ST	26,500	23,000	0.87	26,500	42,900	1.62
	WEST OF MONTE SANO BLVD	26,500	21,000	0.79	26,500	39,500	1.49
	EAST OF MONTE SANO BLVD	23,000	17,000	0.74	23,000	38,700	1.68
ARTERIAL	SOUTHERN BYPASS						
	SOUTH OF I-565	NA	NA	NA	136,000	75,700	0.56
	WEST OF MARTIN RD	NA	NA	NA	136,000	50,100	0.37
	NORTH OF WEATHERLY RD	NA	NA	NA	102,000	51,000	0.50
	SOUTH OF WEATHERLY RD	NA	NA	NA	68,000	47,500	0.70

**TABLE 4.4: VOLUME / CAPACITY RATIOS FOR LOCAL ROADS AND STREETS
1992 AND 2015**

FUNCTIONAL CLASS	LOCATION	1992 CAPACITY	1992 ADT	1992 V/C RATIO	2015 CAPACITY	2015 ADT	2015 V/C RATIO
ARTERIAL	BOB WALLACE AVE						
	INTERSECTION AT I-565	26,500	20,500	0.77	26,500	31,700	1.20
	WEST OF TRIANA BLVD	26,500	22,400	0.85	26,500	24,300	0.92
	EAST OF TRIANA BLVD	26,500	22,000	0.83	26,500	24,200	0.91
	WEST OF LEEMAN FERRY RD	26,500	24,800	0.94	26,500	26,000	0.98
ARTERIAL	CALIFORNIA ST						
	NORTH OF ADAMS ST.	23,000	19,700	0.86	26,500	24,400	0.92
	NORTH OF GOVERNORS DR	23,000	20,200	0.88	26,500	25,400	0.96
	NORTH OF BOB WALLACE	23,000	20,300	0.88	26,500	25,300	0.95
ARTERIAL	CARL T. JONES / BAILEY COVE RD						
	EAST OF WHITESBURG	23,000	17,600	0.77	23,000	23,200	1.01
	NORTH OF FOUR MILE POST RD	23,000	17,600	0.77	23,000	24,200	1.05
	NORTH OF WEATHERLY	26,500	19,600	0.74	26,500	12,900	0.49
	SOUTH OF MOUNTAIN GAP RD	26,500	11,100	0.42	26,500	5,300	0.20
ARTERIAL	COUNTY LINE RD						
	NORTH OF HWY 20 W.	14,000	4,800	0.34	23,000	12,500	0.54
	SOUTH OF I-565	14,000	2,000	0.14	23,000	4,300	0.19
ARTERIAL	HUGHES RD						
	SOUTH OF HWY 72 W.	N/A	N/A	N/A	17,500	14,600	0.83
	NORTH OF MADISON PIKE	11,000	9,200	0.84	17,500	15,100	0.86
	NORTH OF HWY 20 W	N/A	N/A	N/A	23,000	23,500	1.02
ARTERIAL	MARTIN RD.						
	EAST OF WALL TRIANA	14,000	5,700	0.41	14,000	15,200	1.09
	WEST OF MEMORIAL PKWY	14,000	10,500	0.75	23,000	7,400	0.32
ARTERIAL	MERIDIAN ST						
	NORTH OF WINCHESTER RD.	14,000	4,300	0.31	14,000	1,900	0.14
	SOUTH OF MAX LUTHER AND US. 72	26,500	14,100	0.53	26,500	23,000	0.87
	NORTH OF OAKWOOD DR.	26,500	15,700	0.59	265,000	26,100	0.10
ARTERIAL	NORTHERN BYPASS						
	NICK FITCHARD RD N. OF HWY 53	11,000	1,400	0.13	26,500	25,400	0.96
	BOB WADE LANE W. OF U S 231	11,000	1,800	0.16	26,500	14,500	0.55
	JORDAN RD N OF US 72 W.	14,000	1,745	0.12	26,500	3,000	0.11
ARTERIAL	OLD MADISON PIKE						
	EAST OF SLAUGHTER RD	26,500	7,700	0.29	26,500	35,600	1.34
	WEST OF RIDEOUT RD	14,000	11,200	0.80	23,000	61,000	2.65
	EAST OF WALL TRIANA	14,000	9,800	0.70	23,000	21,200	0.92
ARTERIAL	PATTON RD / JORDAN LANE						
	SOUTH OF DRAKE AVE	26,500	15,000	0.57	26,500	14,700	0.55
	SOUTH OF BOB WALLACE AVE	26,500	26,300	0.99	26,500	32,100	1.21
	SOUTH OF OAKWOOD AVE	26,500	26,700	1.01	26,500	15,900	0.60
ARTERIAL	PULASKI PIKE						
	SOUTH OF SPARKMAN DR	26,500	17,500	0.66	26,500	19,500	0.74
	NORTH OF WINCHESTER RD	26,500	6,000	0.23	26,500	5,600	0.21
ARTERIAL	RIDEOUT ROAD						
	SOUTH OF BRADFORD DR	50,000	26,300	0.53	50,000	42,400	0.85
	NORTH OF INTERSTATE 565	50,000	27,500	0.55	50,000	55,300	1.11

**TABLE 4.4: VOLUME / CAPACITY RATIOS FOR LOCAL ROADS AND STREETS
1992 AND 2015**

FUNCTIONAL CLASS	LOCATION	1992 CAPACITY	1992 ADT	1992 V/C RATIO	2015 CAPACITY	2015 ADT	2015 V/C RATIO
ARTERIAL	SLAUGHTER ROAD						
	SOUTH OF UNIVERSITY DR	14,000	5,700	0.41	23,000	18,800	0.82
	NORTH OF HWY 20	14,000	7,100	0.51	23,000	10,500	0.46
ARTERIAL	WHITESBURG DR						
	NORTH OF DRAKE AVE	26,500	35,100	1.32	26,500	37,200	1.40
	SOUTH OF CARL T. JONES DR	26,500	26,100	0.98	26,500	15,400	0.58
	SOUTH OF FOUR MILE POST RD	26,500	23,800	0.90	26,500	14,800	0.56
ARTERIAL	WINCHESTER RD						
	EAST OF PULASKI PIKE	26,500	11,000	0.42	26,500	5,800	0.22
	WEST OF N. MEMORIAL PKWY	26,500	9,000	0.34	26,500	8,000	0.30
	EAST OF MOORES MILL RD	14,000	9,000	0.64	26,500	21,800	0.82
COLLECTOR	BLUE SPRINGS ROAD						
	NORTH OF OAKWOOD AVE	23,000	10,100	0.44	23,000	10,400	0.45
	SOUTH OF SPARKMAN DR	23,000	14,000	0.61	23,000	9,400	0.41
	SOUTH OF WINCHESTER RD	23,000	11,800	0.51	23,000	5,400	0.23
COLLECTOR	CHANEY THOMPSON RD						
	SOUTH OF MOUNTAIN GAP RD	11,000	2,200	0.20	11,000	1,300	0.12
	NORTH OF GREEN COVE RD	11,000	1,300	0.12	13,700	2,200	0.16
COLLECTOR	DRAKE AVENUE						
	EAST OF JORDAN LANE	23,000	22,000	0.96	23,000	16,200	0.70
	EAST OF MEMORIAL PARKWAY	23,000	21,900	0.95	23,000	9,200	0.40
	EAST OF WHITESBURG	23,000	9,800	0.43	23,000	11,300	0.49
COLLECTOR	DUG HILL ROAD						
	NORTH OF HWY 72E.	11,000	1,000	0.09	14,000	900	0.06
	SOUTH OF HWY 72 E.	11,000	900	0.08	14,000	10,300	0.74
COLLECTOR	FOUR MILE POST RD						
	WEST OF GARTH RD	13,700	2,800	0.20	13,700	6,200	0.45
	WEST OF WHITESBURG	13,700	6,300	0.46	13,700	6,500	0.47
	FOUR MILE POST EXT.	N/A	N/A	N/A	13,700	20,700	1.51
COLLECTOR	HOLMES AVENUE						
	WEST OF PULASKI PIKE	13,700	11,200	0.82	13,700	17,400	1.27
	WEST OF TRIANA BLVD	13,700	9,600	0.70	13,700	19,000	1.39
	WEST OF JORDAN LANE	13,700	10,100	0.74	13,700	14,200	1.04
COLLECTOR	MOORES MILL RD						
	NORTH OF US 72 E.	23,000	15,900	0.69	26,500	31,800	1.20
	SOUTH OF WINCHESTER RD	14,000	12,700	0.91	26,500	20,200	0.76
	NORTH OF WINCHESTER RD	14,000	6,300	0.45	26,500	14,500	0.55
COLLECTOR	MOUNTAIN GAP RD						
	EAST OF MEMORIAL PKWY	11,000	3,700	0.34	11,000	4,600	0.42
	WEST OF BAILEY COVE	23,000	3,600	0.16	23,000	1,700	0.07
COLLECTOR	OAKWOOD AVENUE						
	EAST OF JORDAN LANE	23,000	14,600	0.63	23,000	22,000	0.96
	EAST OF PULASKI PIKE	23,000	19,200	0.83	23,000	13,600	0.59
	WEST OF ANDREW JACKSON WAY	23,000	13,300	0.58	23,000	13,600	0.59

**TABLE 4.4: VOLUME / CAPACITY RATIOS FOR LOCAL ROADS AND STREETS
1992 AND 2015**

<u>FUNCTIONAL CLASS</u>	<u>LOCATION</u>	1992 CAPACITY	1992 ADT	1992 V/C RATIO	2015 CAPACITY	2015 ADT	2015 V/C RATIO
COLLECTOR	<u>PRATT AVENUE</u>						
	EAST OF ANDREW JACKSON WAY	11,000	5,000	0.45	18,000	9,600	0.53
	EAST OF MERIDIAN ST	18,000	13,000	0.72	18,000	11,000	0.61
	WEST OF WASHINGTON ST	18,000	11,800	0.66	18,000	7,100	0.39
COLLECTOR	<u>SULLIVAN ST (MADISON)</u>						
	SOUTH OF US HWY 72 W.	11,000	8,000	0.73	13,700	9,100	0.66
	SOUTH OF OLD MADISON PIKE	11,000	9,400	0.85	23,000	21,000	0.91
	NORTH OF HWY 20 W.	11,000	17,200	1.56	23,000	21,400	0.93
COLLECTOR	<u>WEATHERLY ROAD</u>						
	EAST OF S. MEMORIAL PKWY	23,000	17,300	0.75	23,000	19,100	0.83
	EAST OF TODD MILL RD	23,000	16,700	0.73	23,000	15,000	0.65
COLLECTOR	<u>WYNN DRIVE</u>						
	SOUTH OF UNIVERSITY DR	18,000	15,900	0.88	23,000	21,500	0.93
	NORTH OF BRADFORD BLVD	18,000	12,900	0.72	18,000	16,000	0.89

CHAPTER V

HIGHWAY PROJECT EVALUATION

ISTEA requires an evaluation process for projects contained in the Long-Range Transportation Plan which result in an integrated and multi-modal transportation system. According to ISTEA, there are specific factors that must be considered, analyzed as appropriate, and reflected in the planning process. These factors are summarized below in Table 5.1.

TABLE 5.1: ISTEA PLANNING PROCESS ELEMENTS

CRITERIA	DESCRIPTION
Congestion Issues	The need to relieve traffic congestion
Cost-effectiveness	Travel cost savings compared to total project cost
Transportation Enhancement Activities	Programming of funding for transportation enhancement activities
Energy Conservation	Reduction of fuel use
Rehabilitation & Maintenance	Preservation of existing transportation facilities
Land Use & Environmental Issues	Interaction of land use and transportation facilities; environmental protection
Access to Intermodal Facilities	Access to ports, airports, intermodal facilities, major freight distribution routes
Connectivity of urban to non-urban roads	The need for connectivity of roads within the metropolitan area with roads outside those areas
Management Systems	Pavement, Bridge, Highway Safety, Congestion, Public Transportation, & Intermodal
Corridor Preservation (right-of-way)	Preservation of right-of-way for construction of future projects
Freight Movements	Methods to enhance freight movements
Social, Economic, Energy & Environmental effects	Overall social, economic, energy & environmental effects of transportation decisions
Life Cycle Costs	Consideration of operating and maintenance costs in analyzing transportation alternatives
Transit Services & Security	Expansion & enhancement of transit services; investments in increased transit security

Table 5.2 is a matrix of the ISTEA planning factors and proposed transportation projects. Projects included in the Long-range plan should consider these factors as appropriate. Transportation projects which more adequately meet the objectives of these factors should be considered a higher priority than those which only marginally meet these criteria.

LAND USE AND ENVIRONMENTAL FACTORS

In order to assess the impacts of the planned transportation improvements in the area, the following environmental factors were considered:

Air Quality. Transportation planning has a profound impact on maintenance of air quality. Although the Huntsville urban area is classified as an attainment area for all criteria pollutants, there have been occasional exceedances of the National Ambient Air Quality Standard (NAAQS) for ozone. Ozone, the principal component of "smog", is formed in the atmosphere from Volatile Organic Compounds (VOC) and nitrogen oxides. At the present time, mobile source emissions account for 55 percent of the VOC and 75 percent of the nitrogen oxides released into the Huntsville airshed (Huntsville Division of Natural Resources modelling and emission inventory data). Since increased traffic congestion results in higher levels of automotive emissions, measures to alleviate traffic congestion also serve to promote improvement in air quality.

Despite continued population growth from 1988 through 1994, data from the Division of Natural Resources indicate significant reductions in mobile source emissions over this time period. This is attributed in part to improvements in the transportation infrastructure which improved connectivity, increased average vehicle speed, and alleviated traffic congestion. Ambient air quality data for ozone have shown a slight downward trend over this same time period. Long range transportation planning to mitigate traffic congestion is thus an integral component of the local strategy to maintain air quality and is essential in maintaining Huntsville's attainment status.

Cemeteries/Historic Properties. Cemeteries (public and private) were located using information from United States Geological Survey (USGS) Quad Maps and from a cemetery inventory map. Copies of the USGS Quad Maps are kept on file in the City of Huntsville Planning Division Facility Inventory Data Base. A copy of the cemetery inventory map is located in the Huntsville/Madison County Public Library.

Historic properties are properties that appear in the National Register of Historic Places, and/or are designated as National Historic Landmarks and/or are located in a Locally Designated Historic District. This information is kept on file in the City of Huntsville Planning Division Facility Inventory Data Base.

Potential Protected and Protected Lands/Champion Trees. Potentially Protected and Protected Lands are from an inventory of properties that have been acquired by, or have been designated as having the potential to be acquired by, the non-profit Huntsville Land Trust.

Champion Trees are those trees that are considered to be of state and/or national significance due to their outstanding size. This information is available from the Alabama Forestry Commission.

Parks and Recreation. The parks and recreation facilities inventoried include City of Huntsville neighborhood and community park and recreation facilities as well as Madison County park and recreation facilities. This information is kept on file in the City of Huntsville Planning Division Facility Inventory Data Base.

Topography. The topographical features of the study area (including slopes, mountains and depressions) were derived from USGS Quad Maps. Copies of these maps are kept on file in the City of Huntsville Planning Division Facility Inventory Data Base.

Floodplains. The locations of the floodplains are designated by the Federal Emergency Management Agency (FEMA). Copies of the maps depicting the locations of the floodplains are kept on file in the City of Huntsville Planning Division Facility Inventory Data Base.

Wetlands. The locations of the wetlands are designated by the U.S. Fish and Wildlife Service. Copies of the maps depicting the locations of the wetlands are kept on file in the City of Huntsville Planning Division Facility Inventory Data Base.

Landfills. The locations of the known landfills (licensed and unlicensed) were provided by the Environmental Services Division of the Madison County Health Department.

Etc. The locations of utility delivery points, universities, public properties, industrial parks, hospitals, water treatment plants, sewage treatment plants, and Redstone Arsenal facilities are found in this category. This information is kept on file in the City of Huntsville Planning Division Facility Inventory Data Base.

A matrix has been created illustrating the proposed transportation improvements in relation to the environmental factors listed above (see Appendix B). A series of maps are also available showing the planned transportation improvement routes and the known environmental factors within the area of improvements.

ADDITIONAL REQUIREMENTS

In addition to the planning process factors, U.S. DOT metropolitan planning regulations require the following:

1. A proactive public involvement process (a Public Involvement Process has been adopted by the MPO and is included in Appendix A)
2. Consistency with Title VI of the Civil Rights Act of 1964
3. Identification of actions necessary to comply with the Americans with Disabilities Act of 1990
4. Provision for the involvement of traffic, ridesharing, parking, transportation safety and enforcement agencies; and airport authorities (opportunities are provided for these agencies through the Technical Coordinating Committee and Citizen's Advisory Committee)
5. Provision for the involvement of environment resource and permit agencies as appropriate

TABLE 5.2: ISTEA PLANNING FACTORS MATRIX

[illegible]

TABLE 5.2: ISTE A PLANNING FACTORS MATRIX

PROGRAM	PROJECT	LOCATION	FACILITY TYPE	OPTIMAL										NOMINAL			MINIMAL			
				CONGEST RELIEF	COST EFFECTIVE	ENERGY CONSERV	REHAB/ MAINT	LAND USE/ ENVIRNT	INTERMDL ACCESS	CONNECT- IVITY	MGT SYS	CORR PRES	FREIGHT	SOCIAL ECONOMIC	TRANSIT SERVICE	LIFE CYCLE				
STOA	FOUR MILE POST RD EXT	BAILEY COVE RD TO TO BIG COVE RD	CONSTRUCT 3 LANES																	
STOA	HOLMES AVENUE	JORDAN LANE TO WOODSON RD	UPGRADE 2LN TO 3 LANES																	
STOA	PLUMMER ROAD	ARDMORE HWY TO RIDEOUT ROAD	UPGRADE 2LN TO 3 LANES																	
STOA	MERIDIAN ST	OAKWOOD TO PRATT	UPGRADE 2-LN TO 5-LANE																	
STOA	COUNTY LINE RD	@ SOU RR	RPL OVERPASS & APPROACHES																	
STOA	NORTHERN BYPASS	PHASE 1 SR 53 TO PULASKI PIKE	CONSTRUCT TO 4 LANE EXPRESSWAY																	
STOA	WINCHESTER RD	NAUGHER RD TO BELL FACTORY RD	UPGRADE TO 4-LN																	
STOA	SULLIVAN ST	HIGHWAY 20 TO MILL ROAD	UPGRADE 2LN TO 5 LANES																	
STAA	SUTTON RD	FOUR MILE POST EXT TO U.S 431 @ BIG COVE RD.	ROADWAY WIDENING																	
STOA	WALL TRIANA HWY	MILL ROAD TO HWY 72 WEST	UPGRADE 2LN TO 3 LANES																	
STOA	WINCHESTER ROAD	HSV CITY LIMITS TO NAUGHER RD	UPGRADE 2LN TO 5 LANES																	
STOA	MOORES MILL ROAD	PH 1, US 72 TO WINCHESTER PH 2, WINCHESTER TO NORTH BYPASS	UPGRADE 2-3 LN TO 5 LANES																	

TABLE 5.2: ISTE A PLANNING FACTORS MATRIX

[illegible]

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TABLE 5.2: ISTE A PLANNING FACTORS MATRIX

PROGRAM	PROJECT	LOCATION	FACILITY TYPE	OPTIMAL				NOMINAL					MINIMAL			
				CONGEST RELIEF	COST EFFECTIVE	ENERGY CONSERV	REHAB/ MAINT	LAND USE/ ENVRNT	INTERMDL ACCESS	CONNECT- IVITY	MGT SYS	CORR PRES	FREIGHT	SOCIAL ECONOMIC	TRANSIT SERVICE	LIFE CYCLE
LOC	MARINER WAY	OLD MADISON PIKE TO EXPLORER BLVD	CONSTRUCT 4 LANES													
LOC	FARROW ROAD	EXPLORER BLVD TO SLAUGHTER ROAD	UPGRADE 2LN TO 4 LANES													
LOC	WINCHESTER RD	MERIDIAN ST TO CITY LIMITS	UPGRADE 2LN TO 5 LANES													
LOC	EASTERN BYPASS	US 72 TO US 431	UPGRADE 2LN TO 4 LANES													
LOC	MARTIN RD	WHITESBURG TO MEM PKWY	UPGRADE 2-LN TO 4-LN													

CHAPTER VI

PUBLIC TRANSPORTATION ELEMENT

The second element of the Long-Range Transportation Plan is the public transportation element. ISTEA places emphasis on the expansion, enhancement and increased use of public transportation to help address traffic congestion problems. To fully address the existing and future traffic congestion problems in the Huntsville urbanized area, alternative solutions to single occupancy vehicles must be maximized to the extent feasible.

The City of Huntsville Public Transit division currently operates a variety of services targeted to specific community transportation needs. The stated goal of the Public Transportation Division is to "provide adequate and efficient community transportation services for the disabled community, senior citizens, commuters, individuals with limited transportation alternatives, and the general public."

The city currently provides these services through several programs. Major emphasis and resources are currently directed to the fixed route Shuttle service and the Handi-Ride paratransit program which serves senior citizens and the disabled community. Community volunteers and human service transportation programs serve other specialized needs. A RideShare program provides matching services for commuters and encourages carpooling and vanpooling on a local and regional basis.



The Public Transit division also provides transportation brokerage to assist citizens, groups and agencies to find or help provide transportation for other specialized needs. Taxicab and Limousine support is also provided. This support includes inspections, advocacy, and other assistance as needed or required by the local privately owned and operated taxicab companies.

A general public transportation study was conducted by the University of Tennessee in 1990. The study reviewed current services and recommended several strategies for operation, routes, etc. Programs have been modified, refined, and improved based on actual experience and customer needs. It is expected that these programs, over the next several years, will continue as they are and the process of refining and adjustment will continue.

The future needs for public transportation services for the city of Huntsville will be dependant on several factors. It is generally believed that a mix of the currently offered services will meet community needs for the next several years. Advances in technology and service delivery may dictate how and in what quantities these services are provided. Expansion of current Handi-Ride and Shuttle services for general transportation needs of the city coupled with maintenance of other programs to meet specific needs will be essential to meet future anticipated growth in demand for services.

CURRENT SERVICES

The Huntsville Shuttle is a fixed route transit program currently operating along several routes utilizing nine (9) buses. A map depicting each route is attached. Hours of operation are 6:00 AM to 6:00 PM, Monday through Friday excluding official City of Huntsville holidays. There is currently no evening nor

weekend service.

Stops are located liberally along each route and benches or shelters are provided at a few of the high ridership locations. There is a central transfer point in the downtown area where all routes connect. There are also several additional transfer points where routes cross and connections can be made.

System headways vary by routes with the longest being one (1) hour the shortest being thirty (30) minutes. Fares are \$1.00 for regular and \$.50 for senior citizens and disabled riders. The half fare provision for seniors and the disabled is in effect for all hours of service and is not currently limited to off peak times. There are also half fare provisions for students traveling to and from classes. A monthly fare card is available and discounted books of single ride tickets are sold in the Public Transportation office.

The Handi-Ride program provides door to door Paratransit service for senior citizens and persons with disabilities. This service operates with twelve (12) vehicles, five (5) of which are wheelchair lift equipped. Operating hours are 6:00 AM until 6:00 PM and riders call to request a trip. This service gives priority to A.D.A. eligible riders while serving the entire city of Huntsville. Fares for Handi-Ride are one dollar (\$1.00) per trip with no discounted tickets or passes. Trips are for medical, employment, rehabilitation and personal business purposes.

The Community Volunteer and Human Service Agency programs provide specialized transportation utilizing approximately twenty (20) vehicles. They are usually operated by volunteer groups or Human Service agencies to serve their more specialized transportation needs that can't be met by the fixed route or Handi-Ride service.

The RideShare program is an employee based program that surveys local employers and matches riders together for carpools and vanpools. This service is also promoted through signs located throughout the city. Commuters are matched together and encouraged to form carpools or vanpools.

FACTORS AFFECTING FUTURE PUBLIC TRANSPORTATION PLANS

The City of Huntsville has experienced an erratic growth pattern over the last 50 years. The city population increased dramatically during the space race and subsequent defense buildup. This growth placed heavy demands on the public infrastructure during these peak growth times.

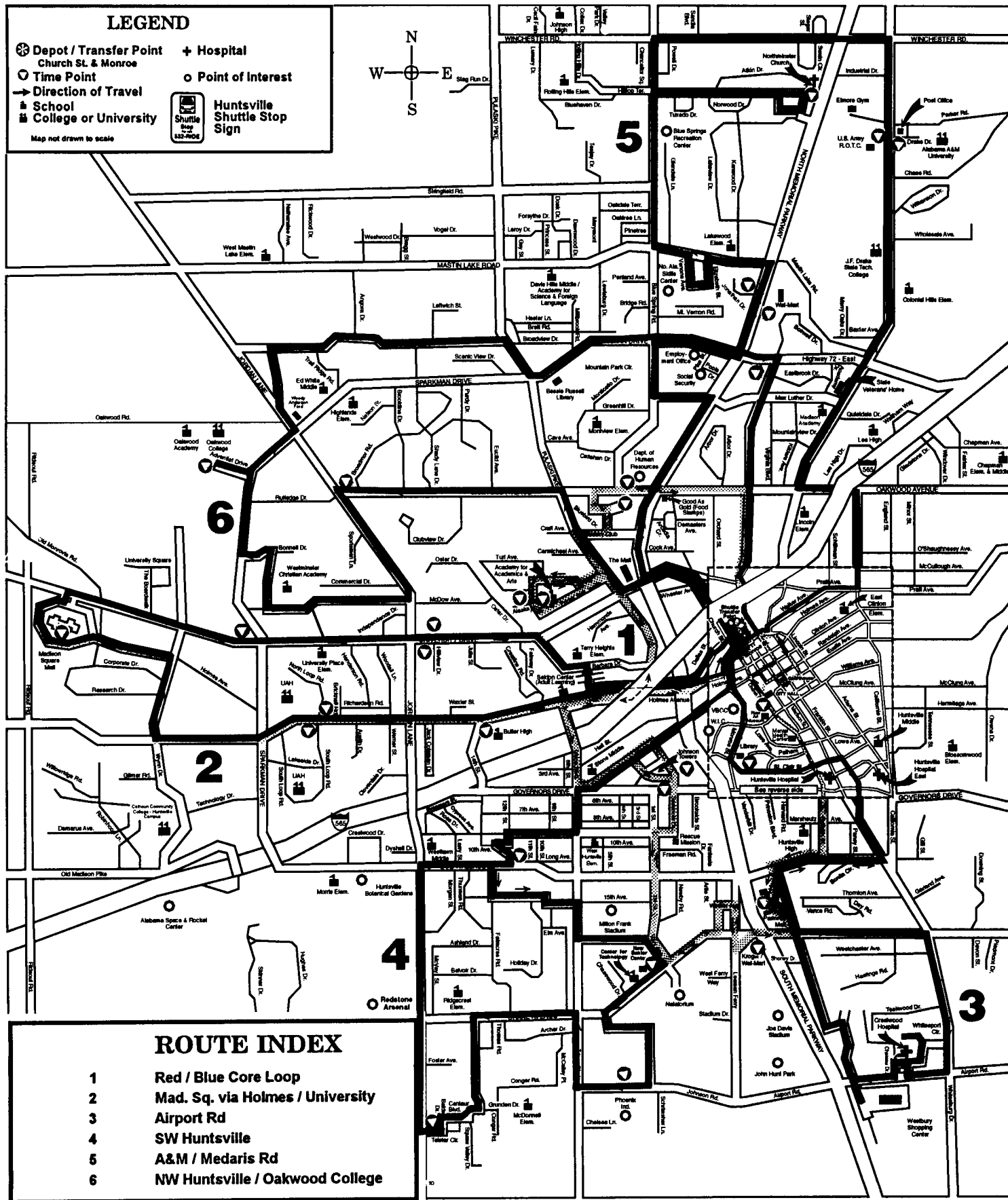
A result of many persons working in the military and space industries in Huntsville is that significant numbers that moved to other areas are returning to Huntsville and the surrounding area to retire. This coupled with the aging of the Baby Boom generation over the next 20 years should mean significant increases in senior citizen and disabled residents. It is anticipated that services utilized by these populations will need to be expanded and enhanced to meet the demand.

Service provided by the Huntsville Shuttle is currently limited and does not cover all areas of the city. There are significant requests for service in these areas and requests will increase over the next few years.

Additionally, there are several area roadways that will reach their capacity over the next few years. Growth in the western and eastern areas of the city should continue. Specific roadways that will become heavily congested are identified in another element of this plan. Shuttle routes and Ridesharing activities should be targeted in those areas also.

As roadways near their capacities efforts to encourage alternative modes of commuting such as the

FIG. 6.1: CURRENT HUNTSVILLE TRANSIT ROUTES



Shuttle and RideShare programs will become essential. When used effectively these programs can assist in reducing peak hour congestion and increasing existing roadway capabilities for the future.

Welfare reform and efforts to provide opportunities for productive youth and children's activities will significantly affect the need for public transportation over the next twenty (20) years. One of the key elements in effective reform will be the provision of low cost transportation alternatives for employment opportunities, job training, and related requirements for gainful employment. Effective public transit services in Huntsville will be essential in helping to provide these opportunities as the need continues to increase.

Finally, the increasing Federal requirements to reduce pollution due to automobile usage will necessitate more reliance on alternative transportation. Ridesharing, vanpooling, and public transit will all play an increasing role in meeting these goals.

20 YEAR NEED FOR TRANSPORTATION SERVICES

The Public Transit division has conducted a quarterly ridership survey over the last year. The results of the survey coupled with general phone requests and requests from social service agencies form additional support for the factors stated earlier. This information will also serve as the basis for future plans for additional Shuttle routes and Handi-Ride service to meet growing future demands.

There are several areas of concern most often cited by users of the fixed route service. The first is the expansion of existing service hours and days of service - 33% of those surveyed on existing routes during the last year indicated the need for at least limited service on weekends, particularly Saturday. Of those surveyed, 17% of responses indicated a need for additional hours of service in the evening.

There have also been significant requests for expansion of routes.

Another element often requested and needed is decreased route headways. Headways are currently one (1) hour on most routes. An ideal headway goal system-wide is for service each half hour and 20 minutes on the more heavily utilized routes. Such a reduction would provide better service to existing routes.

As the service level and number of routes grow there will be additional capital expenditures that will be necessary to support the program, including a new transfer point. The current facility is small and congested during peak ridership times. It offers limited shelter during inclement weather and lacks some facilities that are necessary for an expanding program. Additional smaller transfer facilities or shelters will be needed at secondary transfer points.

Routes most often requested:

1. Service to the southernmost area of the city particularly the Weatherly Road/Bailey Cove Road area.
2. Service for the Space and Rocket Center, Airport, and Research Park and other areas to the west.
3. Eastern expansion to offer service in that rapidly expanding area is well as the other established areas of Five Points and Chapman.
4. Expansion to serve the Redstone Arsenal particularly the troop and housing areas.
5. Downtown circulator route.

It will be necessary for public transportation to have additional repair and maintenance facilities that would likely be incorporated into an expanded City of Huntsville repair facility.

With the aging of the population, an increase in services provided for senior citizens and disabled residents is also anticipated. Mandates such as the Americans with Disabilities Act and other efforts to provide access to jobs, health care and other activities for those with disabilities will make this additional service necessary.

The cost of providing the resources to keep persons active, productive and independent are far less than those required for institutionalization or other primary care alternatives. The Handi-Ride service must expand to continue to meet A.D.A. requirements and provide access to senior citizen services. The demand for this service has doubled in the last seven years and it is anticipated that demand will continue to increase. It is anticipated that ten (10) to fifteen (15) additional lift equipped vehicles to serve these needs city-wide will be required over the next 20 years.

It is believed that a reasonable expansion of the current services provided by the City of Huntsville Public Transit division will meet most needs and demands for service over the time period. Adjustments for travel patterns and roadway capacities will also dictate the services necessary over the next 20 years. New Technologies and delivery systems will be considered as appropriate. Targeted implementation of expanded services will help to minimize budgetary impacts and allow for planned and orderly growth.

FINANCING OF SERVICES

The financing of public transportation services include funding from the Federal Transportation Administration (FTA), local sources, and fare revenues. A general cost projection for the Public Transportation Services over the next 20 years is provided below.

YEARS	OPERATING COSTS	CAPITAL COSTS
1996-2000	\$6,885,000	\$1,645,000
2001-2005	7,445,000	1,625,000
2006-2010	7,965,000	1,625,000
2011-2015	8,025,000	1,625,000
TOTAL	\$30,320,000	\$6,520,000

CHAPTER VII

CONGESTION MANAGEMENT ELEMENT

ISTEA requires the adoption of congestion management strategies including as appropriate traffic operations, pedestrian and bicycle facilities, and others that demonstrate a systematic approach in addressing transportation demand. This chapter will focus on traffic operations improvements, such as traffic signals and channelization of intersections in congested corridors where additional through lanes are not recommended. Also, planned pedestrian, bicycle and greenway facilities are included.

TRAFFIC OPERATIONS IMPROVEMENTS ELEMENT

This element covers two types of improvements, congestion remediation and safety enhancements. Often these categories overlap and projects may fall within both groups.

Congestion remediation includes:

- 1) **Traffic Signal Improvements.** Improvements include equipment updates, timing plan improvements, interconnecting signals, traffic signal removal, and traffic signal maintenance.
- 2) **Signal Systems.** Use of interconnects and other methods to coordinate groups of signals, systematically optimizing of signal timing parameters of pretimed signals, advanced control by use of master computers to increase timing plan flexibility, dynamic traffic response, on-line traffic performance monitoring, and control systems components operation.
- 3) **Intersection Improvements.** Use of traffic control devices and minor geometric improvements to increase intersection capacity.

Safety Enhancements include:

- 1) **Upgrading of Traffic Control Devices.** Continual improvement of traffic control devices, including signals, signs, and markings, to meet changing needs and requirements.
- 2) **Geometric Improvements:**
 - a) **Sight Distance:** Removal or relocation of sight distance restrictions, e.g., hill crest, blind curves, vegetation, etc.
 - b) **Intersection:** Reconstruction or channelization to reduce conflicts and/or congestion.
 - c) **Roadway Alignments:** Realignment and reconstruction to reduce driver demand and improve roadway capacity and safety.
 - d) **Railroad Crossings:** Upgrade and improvements to railroad at-grade crossings.
- 3) **Infrastructure Maintenance (Pavements, Bridges, and Traffic Control Devices).** Enhance roadway safety through the maintenance of pavements, bridges, and traffic control devices. Reduction of wet-weather accidents, improvement in night-time driving with traffic control devices and lighting, and updating of bridge guardrail and approaches.

The following is a list of the projects proposed for traffic improvements.

CONGESTION MANAGEMENT PROJECTS

FY 1994-95

1. U.S. 72 EAST - MOORES MILL ROAD
ADDITION OF EAST-NORTH LEFT TURN
LANE
2. HOBBS ISLAND ROAD - MEMORIAL
PARKWAY
WEST TO NORTH RIGHT TURN LANE
AND ACCEL LANE
3. OLD MADISON PIKE - SLAUGHTER ROAD
LEFT TURN LANE
4. TECHNOLOGY DRIVE - SPARKMAN DRIVE
LEFT AND RIGHT TURN LANES
RESIGNALIZATION
5. LAKESIDE DRIVE - SPARKMAN DRIVE
RESIGNALIZATION
6. REDSTONE ROAD
RESIGNALING AND/OR WIDENING
7. SPARKMAN DRIVE - NORTH LOOP ROAD
ISLAND CONSTRUCTION

FY 1995-96

8. SPARKMAN DRIVE - UNIVERSITY DRIVE
RESIGNALIZATION - PEDESTRIAN
SIGNALS
9. STRINGFIELD ROAD - JORDAN LANE
NEW SIGNALIZATION
LEFT TURN LANES
10. OLD HIGHWAY 431 - U.S. HIGHWAY 431
NEW SIGNALIZATION
LEFT TURN LANES
11. FIRST STREET - BOB WALLACE AVENUE
LEFT TURN LANE ADDITIONS
RESIGNALIZATION
12. SAINT CLAIR AVENUE - MONROE
STREET
RESIGNALIZATION
ISLAND CONSTRUCTION
13. MEMORIAL PARKWAY - DRAKE AVENUE
SOUTH - WEST RIGHT TURN LANE

SAFETY MANAGEMENT PROJECTS

FY 1994-95

1. BANKHEAD BOULEVARD - TOLL GATE
ROAD
RECONSTRUCT AND REALIGN
INTERSECTION
2. ASPEN DRIVE - SPARKMAN DRIVE
SIGHT DISTANCE RESTRICTION
REMOVAL
3. HOBBS ISLAND ROAD - PARSONS ROAD
ACCEL/DECEL LANES

FY 1995-96

4. PITKIN DRIVE - SPARKMAN DRIVE
SIGHT DISTANCE RESTRICTION
REMOVAL
5. BOB WADE LANE - MT LEBANON ROAD
SIGHT DISTANCE RESTRICTION
REMOVAL
6. BANKHEAD BOULEVARD - FEARN
STREET
ROADWAY DELINEATION - CURB AND
GUTTER

FY 1996-97

- 14. FOURTEENTH STREET - GOVERNORS DRIVE
ADDITION OF RIGHT TURN LANE
- 15. ARTIE DRIVE - DRAKE AVENUE
LEFT TURN LANE ADDITION
- 16. WASHINGTON STREET/JEFFERSON STREET - MONROE STREET
ISLAND CONSTRUCTION
- 17. MAX LUTHER DRIVE - WASHINGTON STREET
RESIGNALIZATION
- 18. MERIDIAN STREET - MEMORIAL PARKWAY
ISLAND CONSTRUCTION - RIGHT TURN

FY 1997-98

- 19. JEFF ROAD/SLAUGHTER ROAD - UNIVERSITY
RESIGNALIZATION
LEFT TURN LANES
- 20. WASHINGTON STREET - ABINGTON AVENUE
RESIGNALIZATION
- 21. GOVERNORS DRIVE - CALIFORNIA STREET TO MONTE SANO BOULEVARD
SIGNAL INTERCONNECT EXTENSION
- 22. CHURCH STREET - OAKWOOD AVENUE
LEFT TURN LANE ADDITION

FY 1998-99

- 23. TECHNOLOGY DRIVE - WYNN DRIVE
LEFT TURN LANES
RESIGNALIZATION
- 24. BRADFORD DRIVE - WYNN DRIVE
RESIGNALIZATION
- 25. JORDAN LANE - 9TH AVENUE TO BOB WALLACE AVENUE
ADDITION OF RIGHT LANE TO BOB WALLACE AVENUE
- 26. WASHINGTON STREET - OAKWOOD AVENUE
FLATTEN INTERSECTION GRADE / INCREASE INTERSECTION RADII
- 27. NINTH AVENUE -JORDAN LANE
WEST TO SOUTH LEFT TURN LANE

FY 1996-97

- 7. VENONA DRIVE - MASTIN LAKE ROAD
SIGHT DISTANCE RESTRICTION
REMOVAL
- 8. VALLEY LANE SOUTH OF WEATHERLY
REALIGNMENT OF CENTERLINE
- 9. ZIERDT ROAD - BARREN FORK ROAD
LEFT TURN LANE ADDITION
- 10. HOBBS ISLAND ROAD - ALDRIDGE CREEK
GUARDRAIL ALONG EMBANKMENT
- 11. MONTE SANO - NORTH OF GOVERNORS DRIVE
GUARDRAIL INSTALLATION

FY 1997-98

- 12. WASHINGTON STREET SOUTH OF ABINGTON AVENUE
REALIGNMENT
- 13. BOB WADE LANE WEST OF MT LEBANON ROAD
REALIGNMENT OF ROADWAY
- 14. WALL-TRIANA HIGHWAY - JAMES RECORD ROAD
CONSTRUCT ISLANDS

FY 1998-99

- 15. JORDAN LANE FIRE STATION
RESIGNALIZATION

- 28. SOUTH MEMORIAL PARKWAY - MARTIN ROAD TO HOBBS ISLAND ROAD SIGNAL INTERCONNECT
- 29. WALL-TRIANA HWY - CAPSHAW ROAD LEFT TURN LANES / SIGNALIZATION

FY 1999-2000

- 30. CLINTON AVENUE - TRIANA BOULEVARD - GOVERNORS DRIVE REALIGNMENT AND RESIGNALIZATION
- 31. WEATHERLY ROAD - BAILEY COVE ROAD FLATTEN INTERSECTION GRADE
- 32. AIRPORT ROAD SIGNAL INTERCONNECT
- 33. LINCOLN STREET - EUSTIS AVENUE RESIGNALIZATION
- 34. NORTH MEMORIAL PARKWAY - SPARKMAN DRIVE TO BOB WADE LANE SIGNAL INTERCONNECT

FY 2000-2001

- 35. GREATER DOWNTOWN SIGNAL INTERCONNECT
- 36. SPARKMAN DRIVE - I-565 TO JORDAN LANE SIGNAL INTERCONNECT

FY 2001-2002

- 37. WHITESBURG DRIVE NORTH OF AIRPORT LANE WIDENING
- 38. BLEVINS GAP ROAD - BAILEY COVE ROAD LEFT TURN LANE ADDITION

FY 2002-2003

- 39. MASTIN LAKE ROAD - U.S. 72 EAST RESIGNALIZATION INTERSECTION REDESIGN
- 40. PULASKI PIKE - UNIVERSITY DRIVE ADDITION OF ONE SOUTHBOUND LANE

FY 2003-2004

- 41. PRATT AVENUE - WASHINGTON STREET TO CHURCH STREET ROADWAY REALIGNMENT

FY 1999-2000

- 16. LILY FLAGG ROAD - WHITESBURG DRIVE TO HICKORY HILL ROAD REALIGNMENT AND SAFETY IMPROVEMENTS
- 17. CARTERS GIN ROAD WEST OF PULASKI PIKE REALIGNMENT
- 18. WELLS AVENUE - TOLL GATE ROAD (2) RECONSTRUCT INTERSECTIONS

FY 2000-2001

- 19. OLD MONROVIA ROAD - JOHNS ROAD - OAKWOOD ROAD INTERSECTION REALIGNMENT / SIGNALIZATION

FY 2002-2003

- 20. SEMINOLE STREET - 9TH AVENUE TO 1ST STREET REALIGNMENT

PEDESTRIAN AND BICYCLE/GREENWAYS FACILITIES ELEMENT

The City of Huntsville has adopted a Sidewalk Improvement Program, a Bikeway Plan and a Greenways Plan which covers the majority of the Huntsville urbanized area.

The Sidewalk Improvement Program is an on-going effort by the City of Huntsville to provide sidewalks in parts of the city currently lacking pedestrian facilities. The latest plan, including 115 sidewalk projects, was adopted in June 1994 for Fiscal Years 1995-1999 (see Figure 7.1). The City of Huntsville provides funding for this program.

The City of Huntsville Bikeway Plan was adopted in June 1992, and contains 29 projects phased over a five-year period (see Figure 7.2). Included are bike lanes, bike paths, sidewalk bikeways and bike routes. In addition, bikeway design criteria were updated to the latest AASHTO standards.

The Greenways Plan for the City of Huntsville was adopted in December 1992. Greenways are protected corridors of open space along natural features such as streams and ridges or along manmade features such as abandoned railroad beds or scenic roadways. When complete, the greenways system will include over 130 miles of interconnected trails, including canoe trails, pedestrian/bike trails and hiking trails (see Figure 7.3).

These plans have been adopted by the MPO as part of this Long-Range Transportation Plan.

TRANSPORTATION ENHANCEMENT ACTIVITIES

ISTEA set aside ten percent of the funding from the Surface Transportation Program for transportation enhancement activities. Enhancements are defined as:

1. Facilities for pedestrians and bicycles
2. Acquisition of scenic easements and scenic or historic sites
3. Scenic or historic highway programs
4. Landscaping and other scenic beautification
5. Historic preservation
6. Rehabilitation and operation of historic transportation buildings, structures or facilities (including historic railroad facilities and canals)
7. Preservation of abandoned railway corridors (including conversion for use as bicycle or pedestrian trails)
8. Control and removal of outdoor advertising
9. Archaeological planning and research
10. Mitigation of water pollution due to highway runoff

The following have been identified as potential enhancement projects:

1. Aldridge Creek Greenway extension
2. Indian Creek Greenway
3. L&N Railroad bikeway
4. McDonald Creek
5. Broglan Branch

FIG. 7.1: SIDEWALK PLAN

- 1 Bel Air Rd
- 2 Hale Dr
- 3 Toftoy Dr
- 4 Peel St
- 5 9th Ave SW
- 6 Whitesburg Dr
- 7 California St
- 8 La Grande St
- 9 Poinciana St
- 10 Sunset Ave
- 11 Monte Sano Blvd
- 12 Ashland Dr
- 13 Bayless Dr NW
- 14 Blue Crest St SW
- 15 Gesman Pl
- 16 Montrose St
- 17 Holiday Dr
- 18 Brook Manor Ave NW
- 19 Fairway Dr NW
- 20 Blevins Gap Rd
- 21 Altadena Dr
- 22 Hickory Hill Ln

- 23 Cutler Dr/Teejay Dr
- 24 Sandhurst Dr
- 25 Penny St
- 26 Lakeview Dr
- 27 Force Dr
- 28 Sockwell/Mythewood
- 29 Deramus Ave
- 30 Marsh Ave/Sherwood Pk
- 31 Mc Dow Ave
- 32 Oster Dr
- 33 Teakwood Dr SW
- 34 Westbury Dr
- 35 Rothmore Dr
- 36 Mythewood Dr
- 37 2nd Ave. NW
- 38 Siniard & Wellina
- 39 Cadillac Dr

- 40 Ward Ave
- 41 California St
- 42 7th Ave SW
- 43 6th Ave SW
- 44 Aspen Ln
- 45 University Dr
- 46 Stapp Dr
- 47 Chicamauga Tr
- 48 Russell St
- 49 Arolen Dr
- 50 Rodgers Dr
- 51 Haynes Ave
- 52 Giles Dr
- 53 Oakwood Ave
- 54 Wells Ave/Tollgate
- 55 Clinton Ave
- 56 Maggie Ave

- 57 Venona Ave
- 58 Mastin Lake Rd
- 59 Owens Dr
- 60 Washington St
- 61 Chadwell Dr
- 62 Beirne Ave
- 63 Beirne Ave
- 64 Mtn Gap Rd
- 65 Clinton Ave
- 66 Belle Meade Dr
- 67 15th St
- 68 Drummond Dr
- 69 Milton Dr
- 70 Charlotte Dr
- 71 L&N Dr
- 72 Hillwood Dr
- 73 Virginia Blvd
- 74 Mastin Lake Rd
- 75 Aftonbrae Dr
- 76 Woodmore Dr
- 77 Nadina Dr
- 78 Wyandotte Dr
- 79 Graylynn Dr
- 80 Pioneer Dr
- 81 Big Cove Rd
- 82 Oakwood Rd
- 83 Mastin Lake Rd
- 84 Wilkenson Dr
- 85 Victory Ln
- 86 Melody Rd
- 87 Chambers Dr
- 88 Delbrook Dr
- 89 Birchwood Dr
- 90 Fernbrook Dr
- 91 Monroe St
- 92 Villaret Dr
- 93 South Park Blvd
- 94 Cecille Dr
- 95 English Dr
- 96 Brandontown Rd
- 97 Criner Rd
- 98 Sanderson Rd
- 99 Holmes Ave
- 100 Irondale Dr
- 101 US 72 E
- 102 US 72 E
- 103 Redstone Rd
- 104 Valley View Dr
- 105 Balwin Dr
- 106 Pawnee Tr
- 107 Greenleaf Dr
- 108 Rockhill Dr
- 109 Woodcrest Dr
- 110 Meadowbrook Dr
- 111 Normandale Dr
- 112 Merry Oaks Dr
- 113 Argyle Rd
- 114 Baxter Ave
- 115 Cooper St

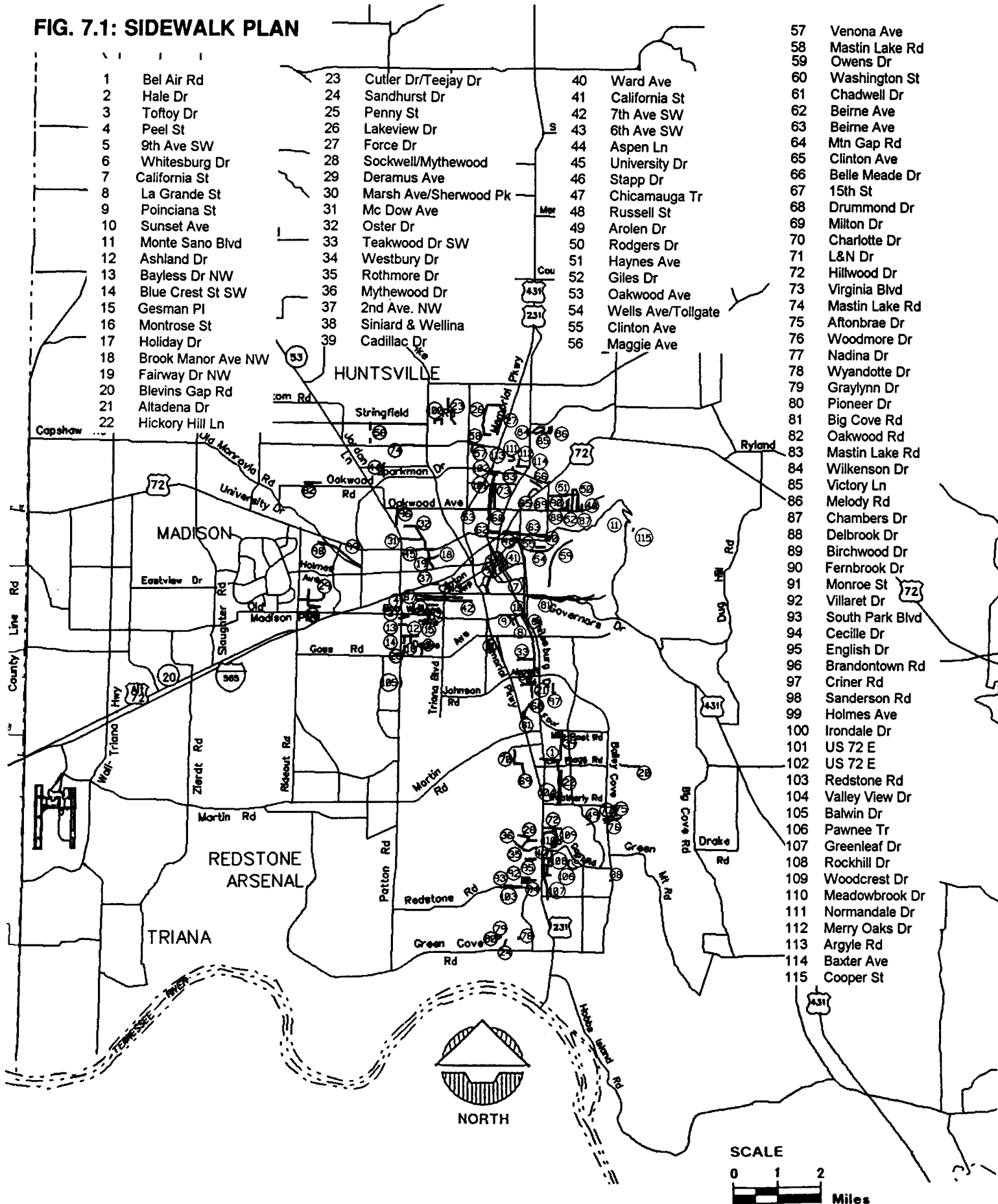


FIG. 7.2: BIKEWAY PLAN

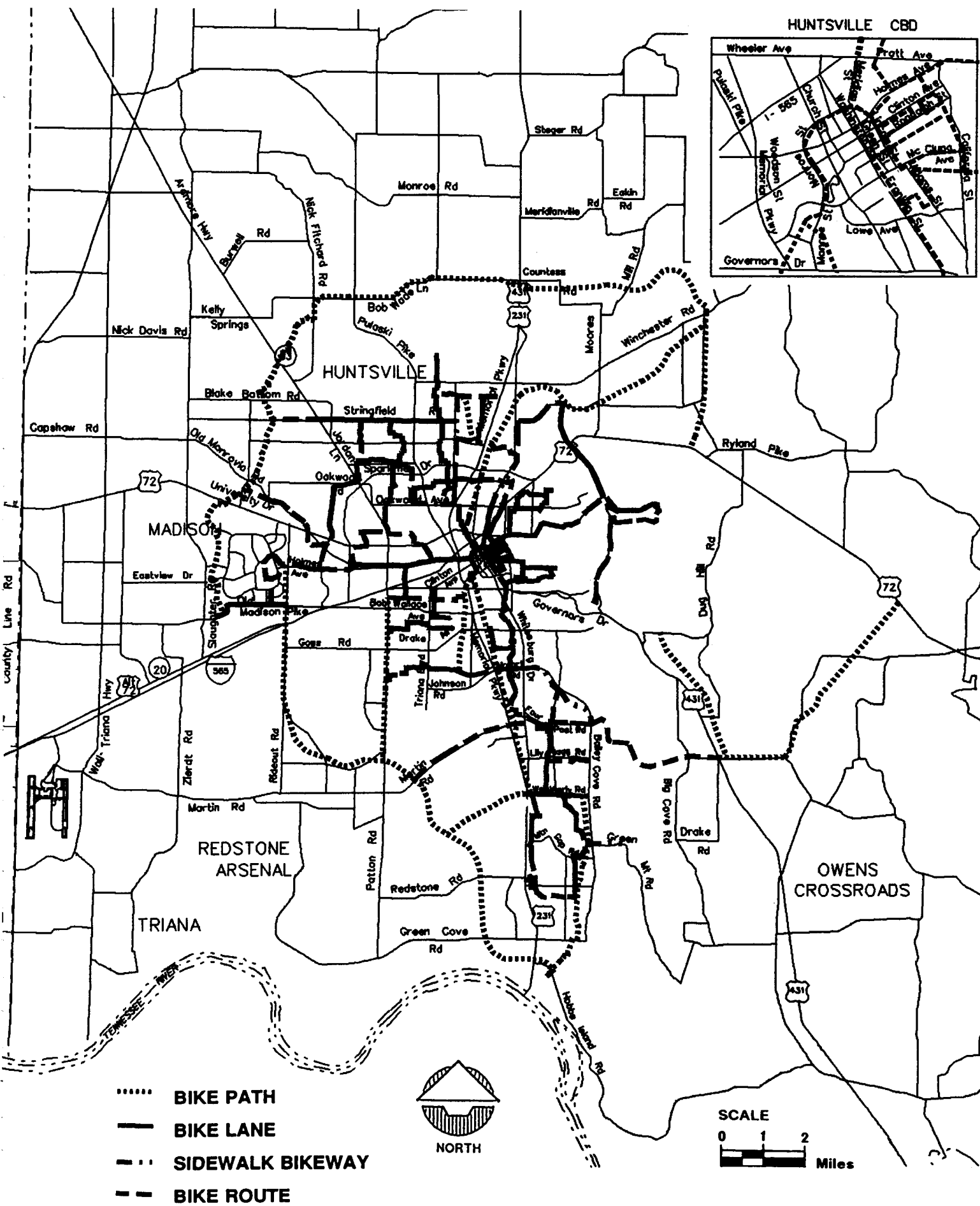
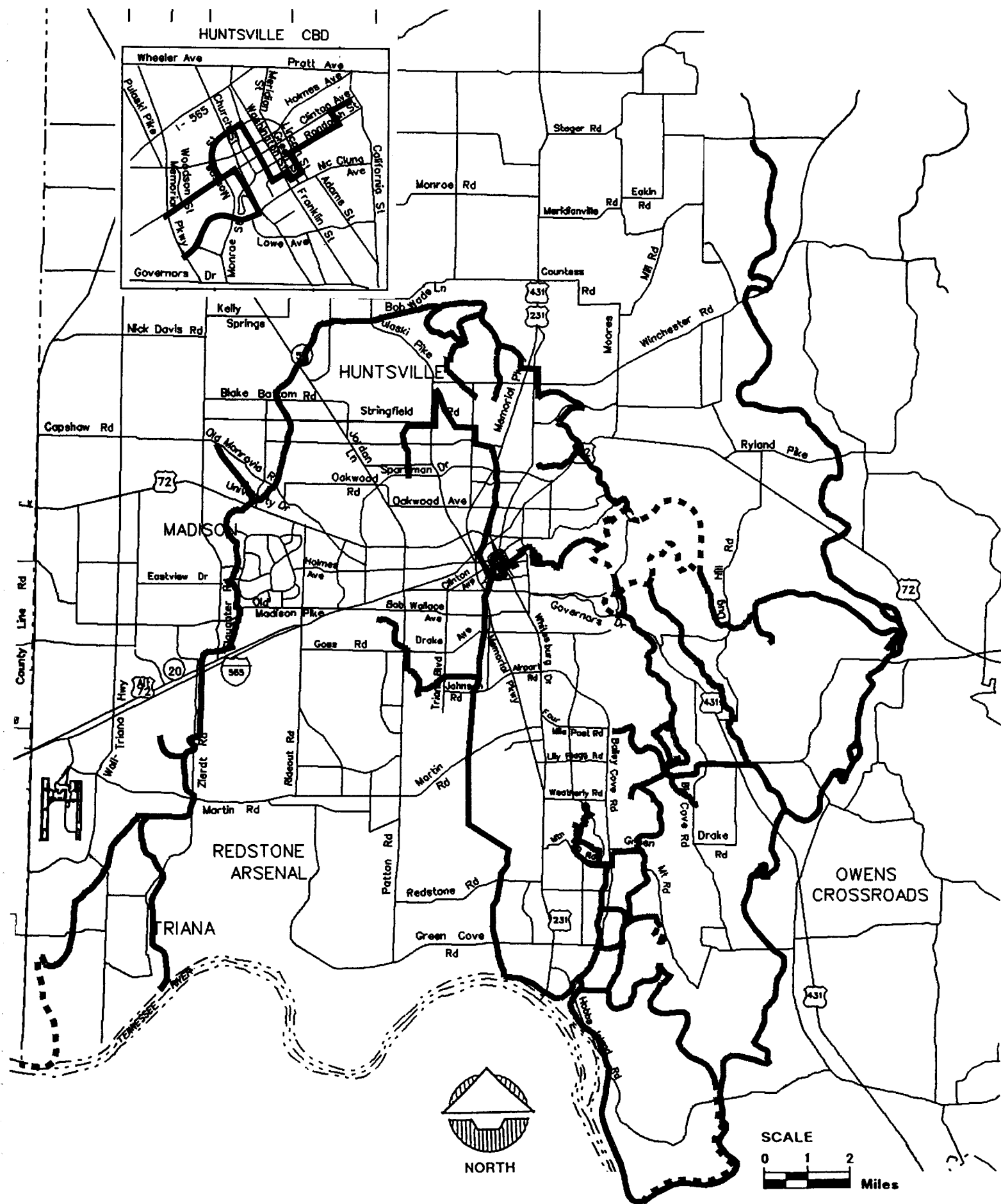


FIG. 7.3: GREENWAYS PLAN



CHAPTER VIII

MULTIMODAL TRANSPORTATION ELEMENT

The long-range plan includes both long-range and short-range strategies/actions that lead to the development of an integrated intermodal transportation system that facilitates the efficient movement of people and goods. Intermodalism attempts to help all modes work better by providing any cross-modal connections the transportation system lacks. This element of the Long-Range Plan includes consideration of airports, railroads, truck terminals, waterways and how they can be better linked together.

Currently, the urban area has excellent linkage between the Huntsville International Airport and the highway system via I-565. The International Intermodal Center (ICC) is located at the airport and is connected to a main line of the Norfolk Southern Railroad via a spur. There is currently no direct connection to the Tennessee/Tombigbee Waterway approximately 5.5 miles south of the airport at the Tennessee River. However a study conducted in 1990 concerning a river terminal site in Huntsville found that barge using industries do not fit the profile of the existing Huntsville economic base. As an alternative, cargo waterway service is available in nearby Decatur offering barge service for bulk commodities and general cargo. Therefore, creating easy access for customers to the IIC and I-565.

A major concern in the Tennessee Valley has been the lack of limited access interstate highway facilities connecting the Huntsville urban area with major cities to the east and west, Memphis, Atlanta and Chattanooga. The area has been essentially left out of the interstate system since the system was designed before Huntsville grew to become a major urban area. Currently, studies are underway to determine a route to connect the Huntsville urban area with Memphis, Atlanta and Chattanooga.

Conventional inter-city passenger rail service should receive further consideration at the state level. Preliminary studies have already been conducted with Amtrak concerning passenger service between Huntsville and Birmingham. However, considering Amtrak's uncertain finances, it is unlikely that it will be adding any new service in the near term. See Chapter IX for potential HSGT corridors.

INTERMODAL FACILITIES

In order to efficiently serve its customers and at the same time cope with the trend of industry movement to suburban and rural locations often remote from existing rail facilities, the railroads are placing increasing importance on intermodal facilities. Development of containerization by railroads is consistent with the trend toward more diverse points of origin and destination, shipment of smaller units, and the need for more rapid service.

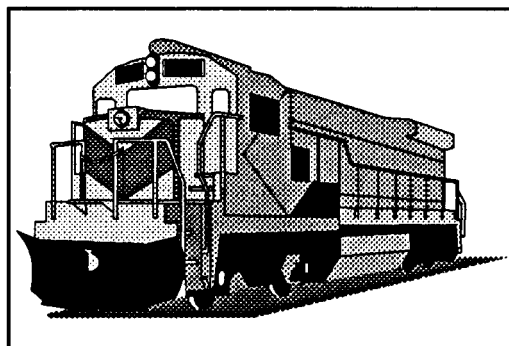
The International Intermodal Center (IIC) is one of the entities that is owned and operated by the Huntsville-Madison County Airport Authority. The International Intermodal and Air Cargo Centers provide multi-modal services and facilities at one central hub location. The center supports a range of services for receiving, transferring, storing and distributing air, rail, and highway cargo and features a U.S. Customs Port of Entry with Customs Officials, U.S. Department of Agriculture Inspectors and Custom Brokers on site. Rail service is provided by Norfolk Southern. The IIC is capable of handling trailer on flat car and container on flat car (TOFC/ COFC) and Double-Stack service. The center is located in Foreign Trade Zone No. 83 which enhances trade and economic development. The Intermodal Center serves as a regional distribution hub for rail customers within a 100 mile radius and air cargo customers as far west as Denver, CO. Norfolk Southern closed its Chattanooga Intermodal terminal January 1995. A large percentage of this traffic is now moving by truck between Huntsville and Chattanooga via the IIC.

RAILROAD FACILITIES

Figures 8.1 through 8.3 illustrate the railroad system in Alabama. Three railroads operate in the urbanized area, Huntsville-Madison County Airport Authority (HMCAA), Huntsville and Madison County Railroad Authority (HMRA) and Norfolk Southern (SOU)(NS).

Huntsville-Madison County Airport Authority (HMCAA) - The Huntsville-Madison County Airport Authority owns and operates 6.2 miles of railroad track west of Wall Triana Highway.

Huntsville and Madison County Railroad Authority (HMRA). The Huntsville and Madison County Railroad Authority is a Class III railroad company that owns 13.25 miles of track in Madison County. The HMRA extends from the SOU connection in Huntsville to Norton Industries and serves all shippers on the line. The long-range plans of the HMRA include maintenance of the existing facilities. No expansions are being considered.



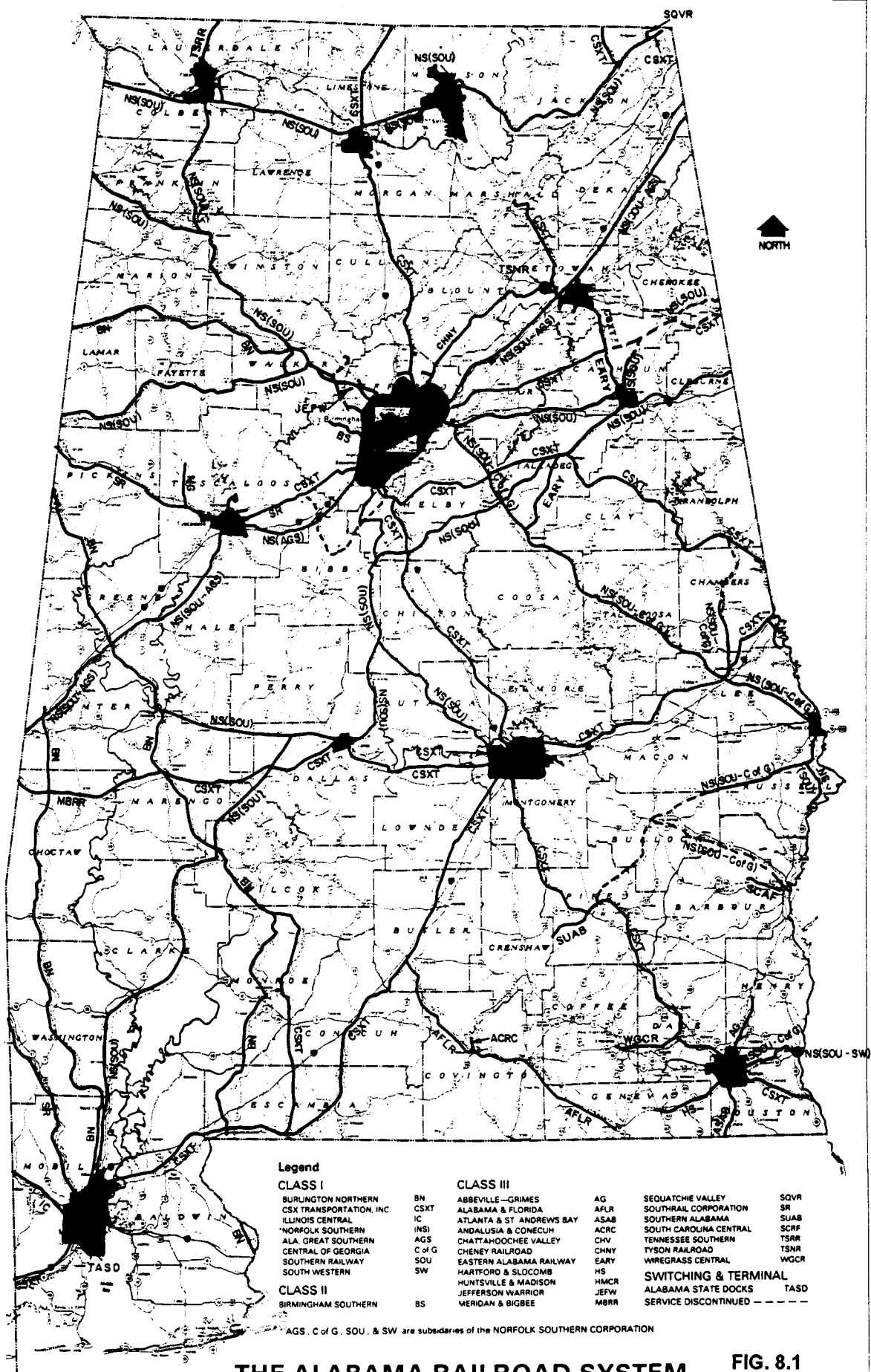
Southern Railway Company (SOU)(NS). This Class I railroad has both North to South and East to West lines with most of the track located in the central and northern part of the state. The SOU has 1,144 miles of track within Alabama. Major commodities transported include coal, chemicals, lumber and wood products. From Huntsville west to I-65 the Southern railway mainline runs north and parallel to I-565, encompassing some of the top quality industrial development property in North Alabama. This property adjoins industrial property in Morgan County along the Tennessee River and in the direction of the river ports in Decatur, Alabama.

There is currently a trend of railroads granting operating rights to other railroads for use of tracks. Consideration should be made to the future possibilities of operating rights for railroads serving Huntsville and Memphis. Shared operating rights could substantially increase intermodal rail and truck activities between these two cities.

AIRPORTS

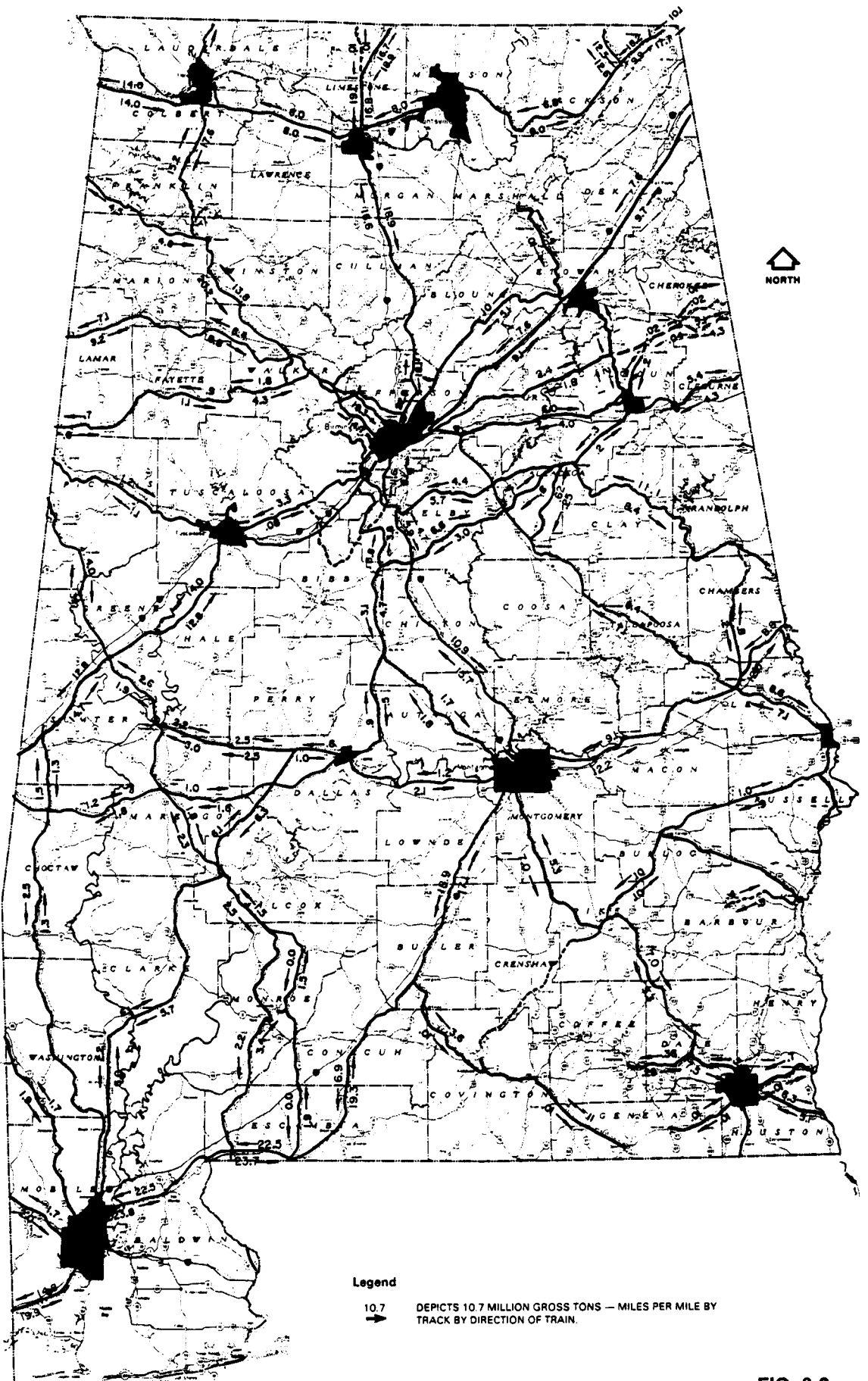
The Huntsville-Madison County Airport Authority is a public corporation which owns and operates the Huntsville International Airport, the International Intermodal Center, the Jetplex Industrial Park and Foreign Trade Zone No. 83. These properties located on approximately 4200 acres are valued at in excess of \$750,000,000.

Huntsville International Airport, with its state-of-the-art amenities, is located just 12 miles from downtown Huntsville. The airport has parallel 10,000 ft. and 8,000 ft. runways with a 5,000 ft. separation allowing simultaneous approaches even in inclement weather conditions. Air traffic operations to date are 60,000 annually with passenger traffic approximately 882,000 (enplaned and deplaned passengers per year) and air cargo tonnage over 46 million pounds per year (see Tables 8.1 and 8.2). The Intermodal Center will handle over 15,000 ocean container and railroad truck load shipments this year. Cargo services via air and rail will serve over 1,000 industries. Air cargo services already in place at Huntsville International Airport include weekly scheduled non-stop international cargo service to Luxembourg and Mexico.



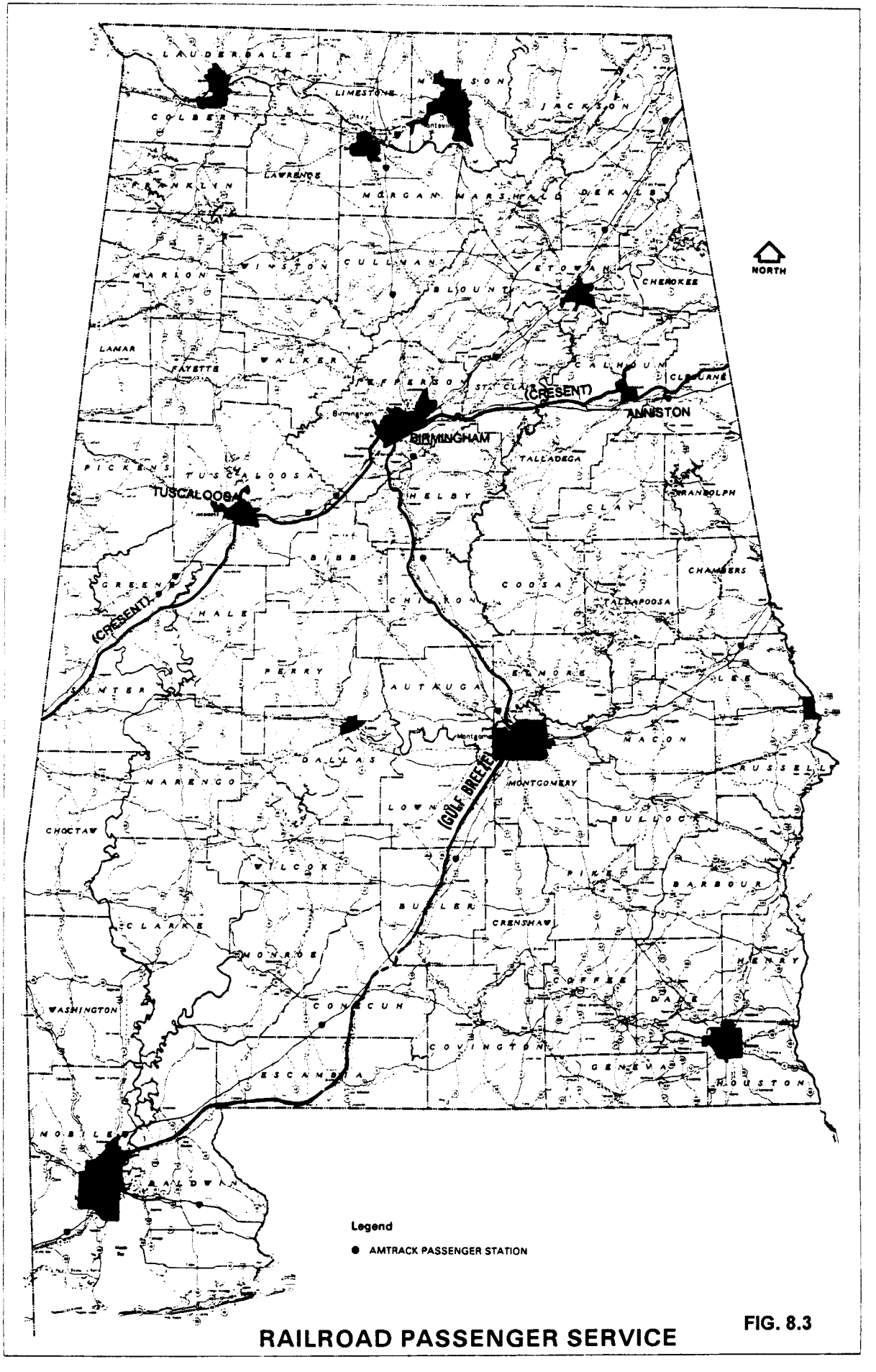
THE ALABAMA RAILROAD SYSTEM

FIG. 8.1



RAILROAD TRAFFIC DENSITIES

FIG. 8.2



RAILROAD PASSENGER SERVICE

FIG. 8.3

**TABLE 8.1: ENPLANED PASSENGERS AND REVENUE TONS, CALENDAR YEAR 1994
HUNTSVILLE INTERNATIONAL AIRPORT**

Carrier	Enplaned Passengers	Enplaned Revenue Tons		
		Freight	Mail	Total
AirTran	2,223	0	0	0
American	137,003	183,407	541,845	725,252
ASA	8,589	2,448	0	2,448
Delta	193,428	1,129,001	765,161	1,894,162
NW Airlin	34,855	15,270	49,265	64,535
US Air	41,966	34,722	161,448	196,170
US Air Express	8,493	11,077	261	11,338
United Express	12,390	192	0	192
Charter	1,840	0	0	0
TOTAL	440,787	1,376,117	1,517,980	2,894,097

**TABLE 8.2: ALL-CARGO CARRIER ACTIVITY SUMMARY
AIR CARGO FREIGHT WEIGHT, CALENDAR YEAR 1994
HUNTSVILLE INTERNATIONAL AIRPORT**

1994 TOTAL	IN	OUT
Airborne Express	1,420,117	1,818,199
Air Carriers, Inc	43,400	43,800
American Int'l	22,362	87,597
Cargolux	11,579,286	12,875,098
Emery Worldwide	9,696,224	8,306,615
Mid-Atlantic Freight	197,404	277,414
Smithkline Beecham	25,200	12,600
GRAND TOTAL	22,983,993	22,921,323

Source: Huntsville International Airport

U.S. Customs has offices in the International Intermodal Center, where it oversees the transportation and inspection of the above mentioned cargo, and collecting over \$12,000,000 annually in import duty taxes, making the inland Port of Huntsville, located at the Huntsville International Airport, the second largest port in the State of Alabama. Foreign Trade Zone No. 83, located at the Huntsville International Airport transportation complex, has seen a dramatic increase in activity over the last four years, resulting in one of the most active zones in the Southeast. Over \$100 million worth of merchandise moved through the zone in 1994. Mallard Fox Creek Industrial Park and Port in Decatur is also part of Foreign Trade Zone No. 83's general purpose zone.

The Statewide Transportation Plan includes the future construction of an interstate highway corridor between Memphis-Huntsville-Atlanta, as described in ISTEPA. With the foregoing overview in mind, the Huntsville-Madison County Airport Authority has formally requested that the Alabama Department of Transportation locate the Memphis-Huntsville-Atlanta Interstate Highway Corridor adjacent to and along the north side of the Huntsville International Airport upon the present I-565 Interstate Highway. This route will

allow the access to the airport, rail and intermodal investments which exist along I-565. I-565 represents over 13% of the mileage in the State of Alabama for the proposed new Memphis, Huntsville, Chattanooga, Atlanta Expressway. There are economies of scale in utilizing I-565, the 22 mile \$400 million asset.

INTERCITY BUS SERVICE

The urban area is served by one major intercity bus company, Greyhound. The following data describe the intercity bus service in Huntsville:

Greyhound Bus Lines:

Average # buses arriving and departing Huntsville daily: 11
Major destinations from the Huntsville station: Nashville, Memphis, Atlanta and Birmingham
Average number of passengers served per day per bus: 50
The average lbs. of cargo shipped per day per bus: 30
Future plans to increase/decrease the number of routes:
The local station could become a major hub if the Memphis-Huntsville-Atlanta Highway runs through Huntsville

Source: Greyhound Bus Lines, Huntsville

TAXICAB SERVICE

Six taxicab companies are licensed to operate in the City of Huntsville:

Company Name	# Licensed Cabs
AAA Cab Company	10
Alabama Yellow Cab Company	20
Jetport Taxi Company	9
Huntsville Cab Company	10
United Deluxe Cab Company	20
Rocket City Cab Company	5

Source: City of Huntsville, Public Transit Division

TRUCKING FACILITIES

The following is a list of rail-highway, drayage and cartage companies serving rail-highway facilities, and motor freight carriers serving the Huntsville urban area.

Rail-Highway Facilities:

Norfolk Southern Corporation (205) 772-7084
TOFC/COFC/Double Stack

TOFC - Trailer on flat car (with wheels)
COFC - Container on flat car (without wheels)
Double-Stack - Containers stacked two high on flat car

Drayage and Cartage Companies Serving Rail-Highway Facilities:

Crosstown Cartage	(205) 461-7515
McGriff Intermodal	(205) 737-9035
Red Arrow	(205) 461-8414
Huntsville Trucking	(205) 464-0363
Jim Potter & Son	(205) 383-7836

Motor Freight Companies:

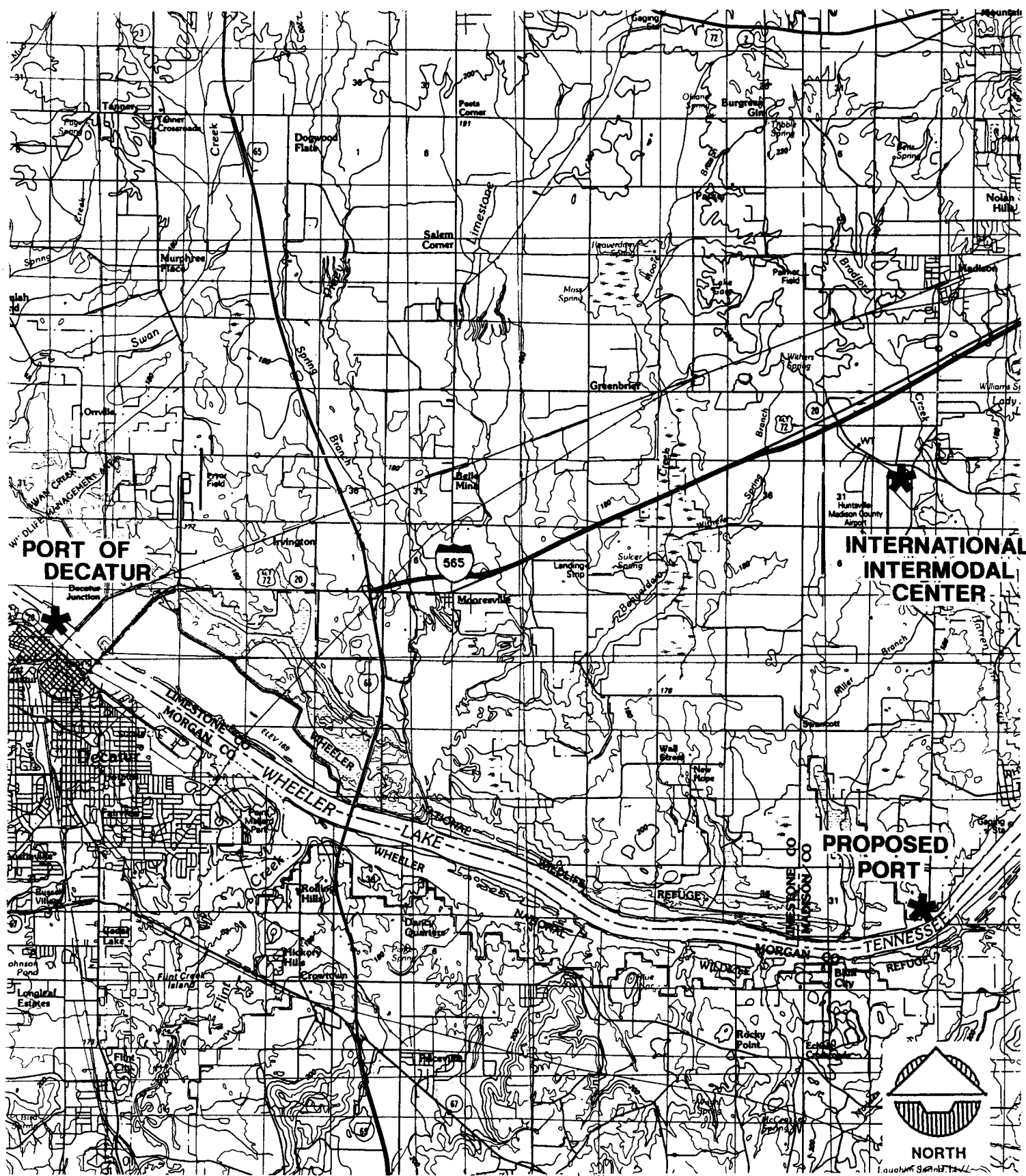
A & F Transportation, Inc.	(205) 851-6200
AAA Cooper Transportation	(205) 536-7921
ABF Freight System	(205) 830-8983
Averitt Express	(800) 423-6568
Birmingham-Nashville Express	(800) 252-2463
Bunch Transport Inc.	(205) 772-3532
Cardinal Transport, Inc.	(205) 533-9103
Carolina Freight Carriers	(205) 533-7692
Carroll Fulmer Co., Inc.	(205) 461-9832
CF MotorFreight	(205) 350-3705
Churchill Truck Line Inc.	(800) 477-3395
Con-Way Southern Express	(205) 351-0390
Dixieland Express	(205) 772-9800
Estes Express Lines	(205) 772-3117
Goggin Truck Line	(205) 721-7812
Inway Transportation	(205) 736-3057
Just In Time Cartage, Inc.	(205) 837-9443
Logistics Partners Co.	(205) 464-0190
Mile A Minute Express Inc.	(205) 533-7271
Neely Truck Line, Inc.	(205) 353-1268
Old Dominion Freight Line, Inc.	(205) 539-3781
Overnite Transportation	(205) 533-0394
R & D Trucking Company	(205) 464-9188
Red Arrow Delivery Service Co.	(205) 461-8414
Roadway Express	(205) 772-9216
Roadway Express Inc.	(205) 772-9216
Ross Neely Systems Inc.	(205) 772-3471
SAIA Motor Freight Line Inc.	(205) 539-1532
Skyline Transportation Inc.	(205) 464-9086
Southeastern Freight Lines	(205) 772-0096
Spartan Express Inc.	(205) 355-4477
TNT North America Inc.	(205) 837-2319
Watkins Motor Lines	(800) 553-5425
Yellow Freight System	(205) 859-6913
Yellow Freight System Inc.	(205) 353-9511

WATERWAY FACILITIES

A feasibility study and a marketing analysis, both conducted in 1990 to consider a river terminal site in Huntsville found that barge using industries do not fit the profile of the existing Huntsville economic base. Benefits of a river terminal site near Wall Triana Highway in southwest Madison County (River Mile 318.7, see Fig. 8.4) are primarily in diversifying the local economic base. A river port is designed to attract certain types of manufacturing industries which need river and rail transportation to be competitive.

The Huntsville economy can continue to grow in the advanced technology area, with or without a river port. However, if diversification into more traditional manufacturing industries fits into future plans for broadening Huntsville's economic base, a river port would be an asset that could make a difference in attracting transportation intensive industries. In the past, heavy industries have not been actively recruited for

FIG. 8.4: PROPOSED PORT LOCATION



SCALE:

Huntsville. The feasibility of a new port development is highly dependent upon a common desire and concerted effort by community leaders to recruit businesses which use barge transportation.

Figures 8.5 and 8.6 illustrate the Tennessee River and Inland Waterway System. Table 8.3 describes waterway facilities in the vicinity of Huntsville.

Sources: Feasibility Study for a Proposed Riverport & Industrial Park at TRM 318.7R near Huntsville, Alabama. Sverdrup Corporation, Nashville, Tennessee. August, 1990.

Market Analysis for a Proposed Commercial River Terminal near Huntsville, Alabama. Sverdrup Corporation, Nashville, Tennessee. August, 1990.

FIG. 8.5

This map illustrates the Tennessee River and its extensive network of interconnected inland waterways across the Eastern United States. The Tennessee River originates in the northwestern corner of Tennessee and flows southeast, eventually emptying into the Gulf of Mexico via the Mississippi River. Major tributaries shown include the Clinch River, Little Tennessee River, Hiwassee River, and Cherokee River in the north; the Duck River, Kentucky River, and Green River in the east; and the Cumberland River, Ohio River, and Mississippi River in the south and west. The map also depicts the Ohio River flowing from the northwest into the Tennessee River at Paducah, and the Mississippi River flowing from the north into the Gulf of Mexico at New Orleans. Other significant waterways shown include the Illinois River, Missouri River, Arkansas River, and the Intracoastal Waterway. Major cities and towns are marked with dots, including Minneapolis, St. Paul, Chicago, St. Louis, Kansas City, Memphis, Nashville, Knoxville, Chattanooga, Florence, Decatur, Columbus, Greenville, Vicksburg, Natchez, Baton Rouge, New Orleans, Houston, Galveston, Corpus Christi, Brownsville, Tampa, and Miami. The map includes state boundaries and abbreviations (e.g., ND, MN, WI, MI, NY, PA, OH, WV, VA, NC, SC, GA, AL, MS, LA, TX, FL) and labels for the Great Lakes (Superior, Michigan, Huron, Erie, Ontario) and the Gulf of Mexico. The title 'TENNESSEE RIVER AND INTERCONNECTED INLAND WATERWAY SYSTEM' is prominently displayed at the bottom.

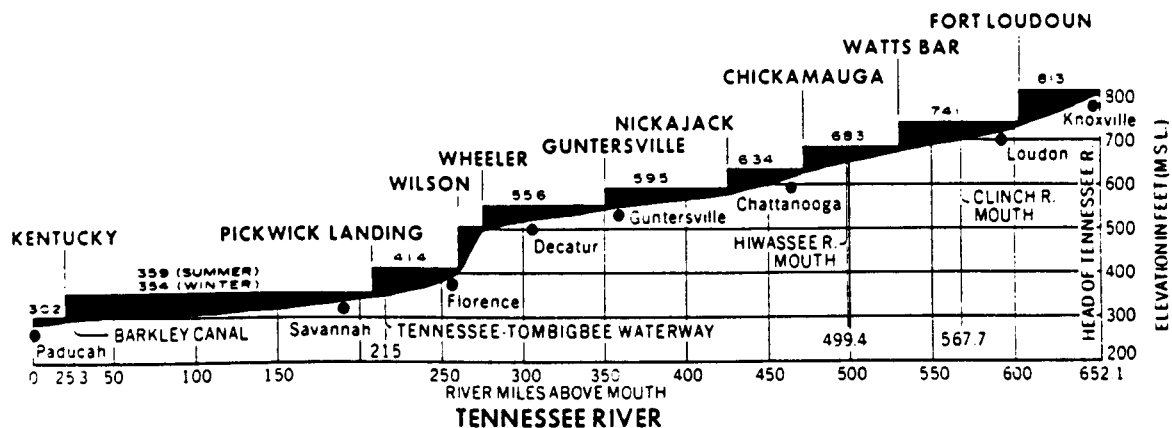
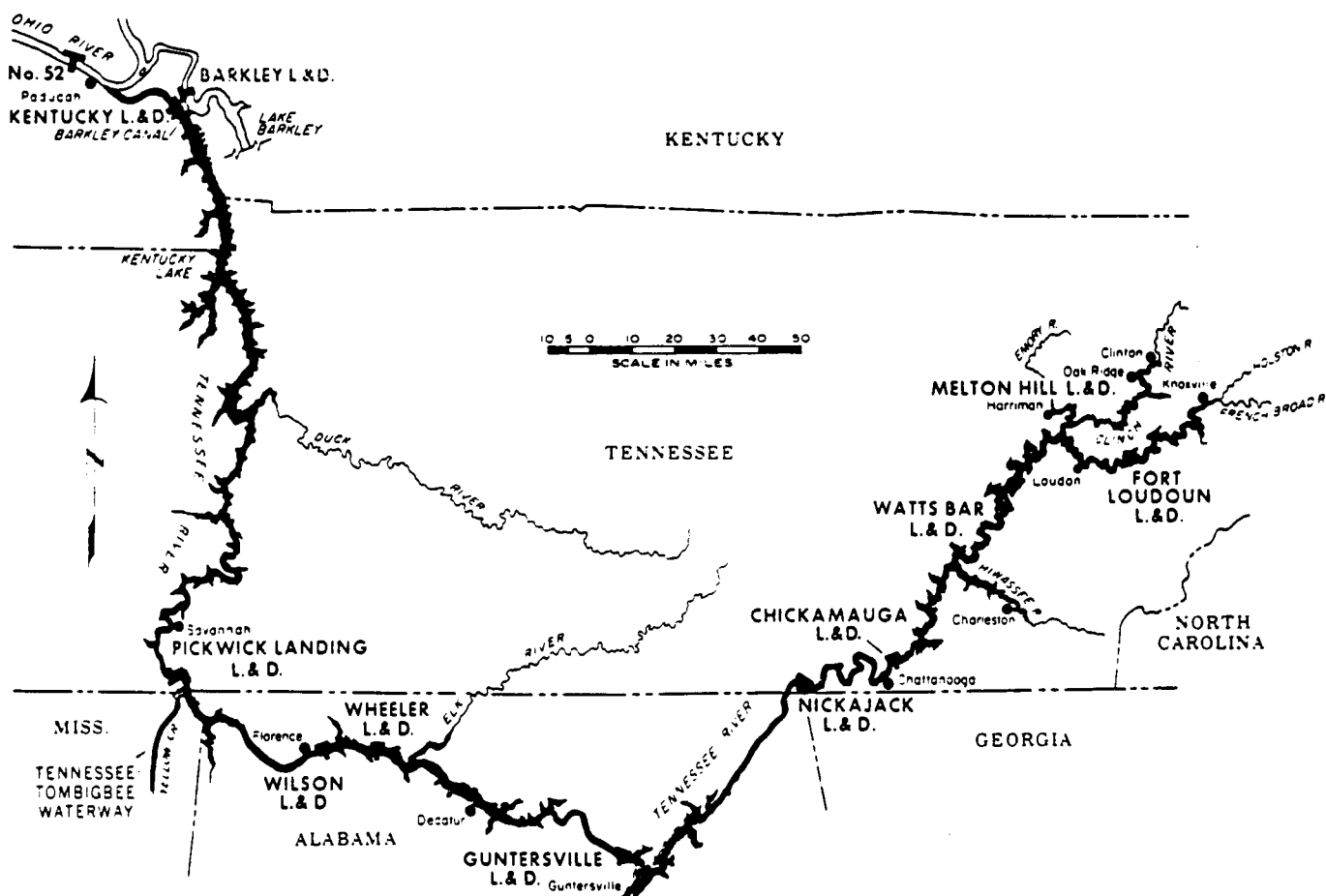
**TENNESSEE RIVER
AND
INTERCONNECTED INLAND
WATERWAY SYSTEM**

9 Feet (2.74 m) or more depth

0.000 ± Miles (14.184 ± km)

FIG. 8.6

LOCKS AND DAMS ON THE TENNESSEE RIVER



TENNESSEE RIVER NAVIGATION SYSTEM

TABLE 8.3: WATERWAY FACILITIES

River Mile *	Name and Location	Type of Terminal	Facilities	Remarks
323.5R	NASA Redstone Arsenal Huntsville, AL (205) 876-1001	Private	Bulkhead, mooring dolphins, derrick, hopper and storage area.	Not in use. Formerly used by U.S. Govt. for transfer of coal. No rail connection.
324.0R	NASA Marshall Space Flight Center Huntsville, AL (205) 876-1001	Private	Dredged slip, dock, mooring cells and dolphins.	Not in use. Formerly used by U.S. Govt. for missile loading. No rail connection.
334.0R	Huntsville-Madison County Port Authority Huntsville, AL (205) 882-1057	Public	Dock, mooring cribs, and transit shed.	Not in use. Formerly used for general freight transfer. No rail connection.
336.6R	Baker Sand and Gravel Co. Hobbs Island, AL (205) 881-4951	Private	Landing barges, derrick, and storage yard.	Barge-storage-truck sand and gravel transfer. No rail connection
304.1L	Port of Decatur River Terminal Dock Decatur, AL (205) 353-9601	Public	Dock, mooring cells, derrick, lifting magnet, asphalt pipeline, steam, general commodity ware-	General freight transfer. Provides fleeting & barge cleaning services. Division of Decatur Transit, Inc. SOU RR connection.

Source: Tennessee Valley Authority Transportation Directory Tennessee-Tombigbee Waterway Corridor Tennessee River System.
January 1988.

CHAPTER IX

MAJOR INVESTMENT ELEMENT

Projects contained in this element are those identified as major transportation investments for which further study is needed to refine the plan and provide input for MPO decisionmaking.

MEMPHIS TO HUNTSVILLE TO ATLANTA AND CHATTANOOGA HIGHWAY PROJECT

ISTEA included funding for certain "High Priority Corridors on the National Highway System." The purpose was to identify highway corridors of national significance; to include those corridors on the National Highway System; to prepare long-range plans and feasibility studies for the corridors; and allow states to give priority to funding the construction of the corridors and allow increased funding for segments of the corridors that have been identified for construction.

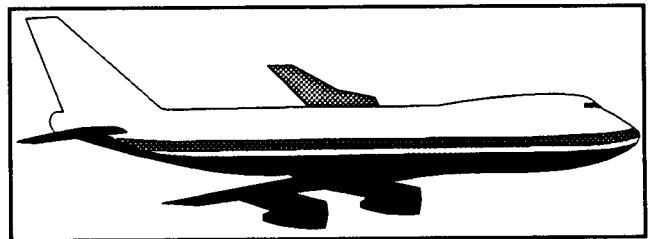
One of these corridors is the "East-West Corridor from Memphis, Tennessee, through Huntsville, Alabama, to Atlanta, Georgia, and Chattanooga, Tennessee." Corridor studies are currently underway on the Memphis to Huntsville to Atlanta and Chattanooga highway project (see Figure 9.1). The HATS' first alternative for the Memphis to Atlanta highway project is the I-565 route. The Southern Bypass alternate would be the second choice. A route south of the river would put the airport, railroad and intermodal facilities 40-50 miles from direct access to the Atlanta to Memphis route. This would have a severe negative impact on the airport facilities.

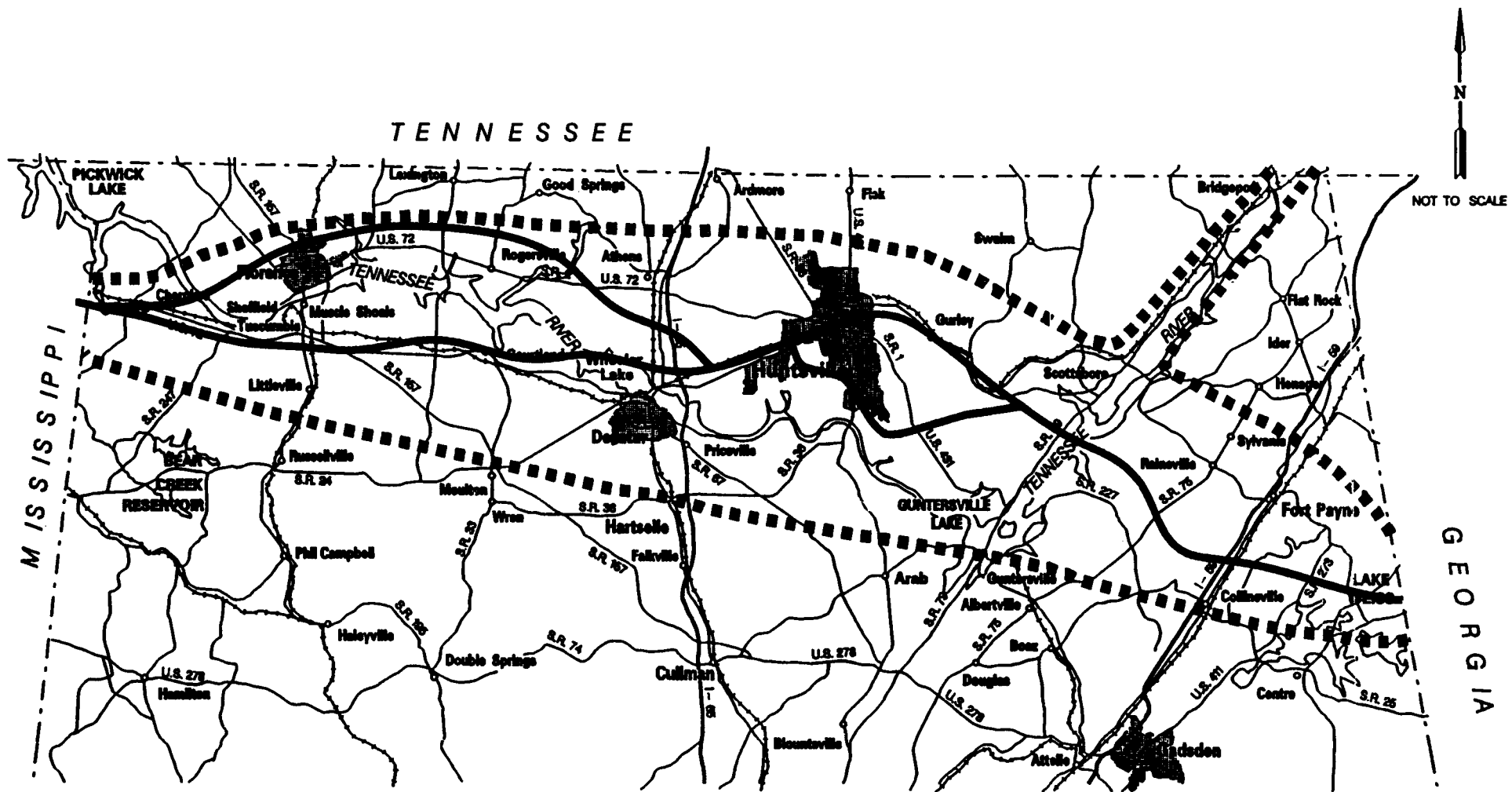
The I-565 route through Huntsville would provide immediate access from Memphis and Atlanta to the Huntsville International Airport, International Intermodal Center, major industries within Huntsville and the community as whole. This route would exit east Huntsville providing favorable container trucking access to the Chattanooga market which has recently discontinued their intermodal container operations. This route also allows for reduced freight transportation cost for products shipped through the International Intermodal Facility as opposed to a route south of the Tennessee River. The I-565 route through Huntsville would utilize an existing 22 miles of interstate highway which would be a significant savings for the overall Memphis-Huntsville-Chattanooga-Atlanta project.

The project should be considered in the long-range plan after completion of the study and a recommended alternate is selected. Special appropriations in the next transportation bill for this "high priority corridor on the National Highway System" will be necessary to fund right-of-way acquisition and construction of this project.

AIRPORT PASSENGER & CARGO HUBBING

The Federal Aviation Administration's 12-year aviation forecast, issued March 3, 1995, projects that 300 million more passengers will be flying on U.S. carriers by the year 2006, an annual growth rate of 4%. In addition, according to a new forecast from the Boeing Commercial Airplane Group, long-term world air freight growth is expected to increase at record rates, averaging 6.5% over the next 20 years. As the nation's air traffic continues to increase, new connecting passenger and cargo hubs must be found to relieve congestion at the





NOT TO SCALE

GEORGIA



LEGEND:
■■■■■■■ CORRIDOR BOUNDARY
———— HATS PREFERRED ROUTES

MEMPHIS TO ATLANTA CORRIDOR STUDY

PROJECT DPS-A002(001)

over-crowded airports. Shrinking federal resources should cause the aviation industry to concentrate on utilizing available capacity before building new airports. As a result, Huntsville International Airport is a prime candidate for a potential connecting hub. Hubbing at Huntsville International Airport would significantly increase the volume of aircraft flights and ground transportation activity associated with hubbing.

Currently, Huntsville International is operating at only 27% of its capacity and has an excess capacity of 219,000 operations per year as determined by the FAA Office of Capacity. To protect future growth potential the Airport Authority continues to pursue an aggressive land acquisition program of approximately 4,500 acres, which will make the airport complex total 8,300 acres. The Airport Layout Plan reflects parallel 8,000 ft. and 10,000 ft. runways with the ability to expand to a total of five parallel runways.

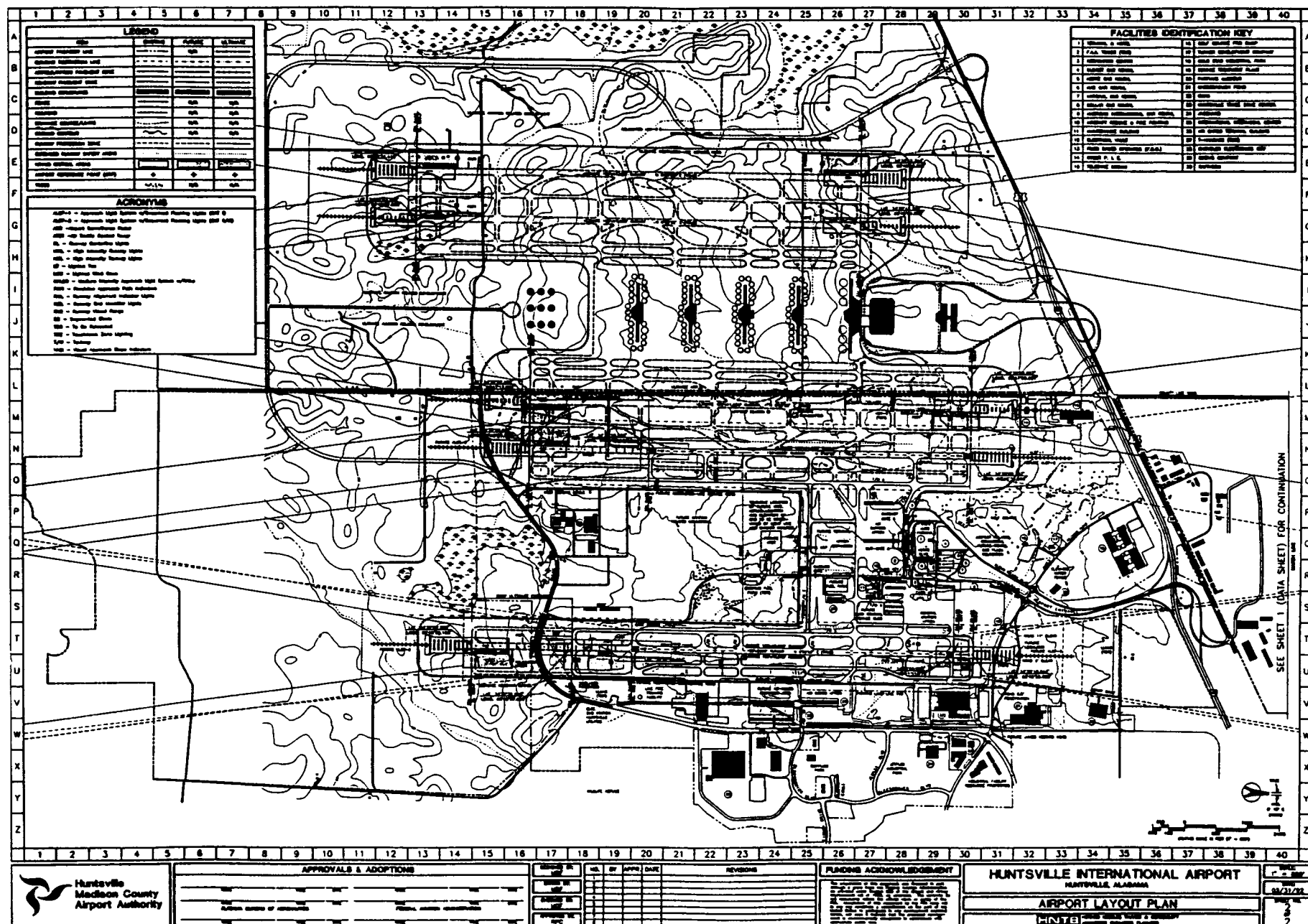
The Huntsville International Airport is strategically located between Atlanta, Birmingham, Chattanooga, Memphis and Nashville, making it an attractive transfer point for the southeastern United States. Airport hubs develop where demand and airline revenue dictate such a need -- "where people live". Within a 50 mile radius of Huntsville International Airport there are 1,000,000 people. If the radius is moved to 100 miles, the population increases to 3.5 million. This is a larger population than the 100 mile radius around Nashville or Birmingham.

Huntsville International also serves an international community. The presence of many international companies has been a driving force in continuous economic growth in North Alabama. The Jetplex Industrial Park is home to Gold Star of America, the first Korean manufacturing operation located in North America. In Madison County alone there are 25 foreign-based corporations with over 69 in the entire service region. These include representation from England, France, Japan, Canada, Germany, Switzerland, Korea, Greece, Spain and Indonesia. Huntsville/Madison County's population base has its origin from over 150 countries. There are several international schools in place as well as the very active North Alabama International Trade Association. Services already in place at Huntsville International include U.S. Customs Port of Entry, Foreign Trade-Zone No. 83, freight forwarders, customs brokers, and weekly scheduled international cargo flights to Luxembourg and Mexico. The world-class Intermodal and Air Cargo Centers combine air, rail and highway modes of transportation and over 70% of all cargo at the Intermodal Center has an international origin or destination.

In addition, Huntsville International Airport was cited by the Federal Aviation Administration as one of four potential new connecting hub airports in a report to Congress entitled "A Case Study of Potential New Connecting Hub Airports", dated March 7, 1991. Of the four airports cited in the report Huntsville International is the only one in the southeast United States. Potential hubs such as Huntsville could significantly reduce flight delay by diverting connecting air passengers from forecast delay-problem airports. The report states while airlines will choose a new hub based on their own particular marketing strategies hub airports developed since deregulation have exhibited one or more of the following characteristics: strong O & D market, good geographic location, expandable airport facilities, multiple instrument weather arrival capability, strong economy and availability of balanced work force and ability to accommodate existing/planned scheduled service fleet. Huntsville International Airport exhibits all of these characteristics.

The impact of airport passenger and cargo hubbing should be considered in the long-range plan after completion of the Airport Authority's Master Plan Update (see Figure 9.2).

FIG. 9.2



PIPELINE FUEL

Currently there is no pipeline in North Alabama to transport petroleum products. The nearest such pipeline is south of Birmingham requiring approximately two hours drive time from Huntsville by truck. Pipeline fuel would provide North Alabama and South Central Tennessee with an uninterrupted supply of fuel, which is extremely critical in an airline's decision to locate a hub at Huntsville International Airport. In addition, transportation costs for the entire region could be reduced as a result of shorter truck hauls.

A feasibility study should be performed to determine the economic viability of this project. The results of this study should be considered in the long-range transportation plan.

INTERMODAL STACK-TRAIN OVERFLOW PROJECT

Further consideration should be given to the potential increase in rail/truck movements at the International Intermodal Center on Wall Triana Highway, located on the east side of the Huntsville International Airport. This subject involves what could be termed, "Intermodal Stack-Train Overflow Project."

The Stack-Train concept has resulted in substantial increases in volumes at major intermodal hubs, like Memphis. Rail intermodal volumes increased 9% last year, with 7% projected in 1995 and until the year 2000, according to the Intermodal Association of North America (IANA). These sustained increases have exceeded the capacity of intermodal terminals in Memphis.

Already, one world-class steamship line, K-Line of Japan, has recognized the capacity and service capabilities at the International Intermodal Center/Huntsville. K-Line runs a weekly stack train from Long Beach, CA to Huntsville, then on to Atlanta, without stopping in Memphis. The start up volume for K-Line has been approximately 2,000 containers annually. These volumes could substantially increase as the Memphis intermodal hub capacity problem increases. Truck movement for this class of service covers a radius of over 150 miles compared to the normal 50 miles.

Another Korean steamship line, Hanjin, has begun sending all its Chattanooga area import/export containers by rail to Huntsville, then trucking to Chattanooga. This would be an additional 1,000 containers annually. Other steamship lines can be expected to follow this trend. The stack-train programs can be expected to impact the International Intermodal Center/Huntsville with substantial increases in truck pick-up and deliveries in the 150 mile radius of Huntsville, as well as greater railroad volumes.

HIGH SPEED GROUND TRANSPORTATION

High-speed ground transportation, including maglev, offers a number of attractive alternatives to conventional rail and air transportation. The following is a summary of HSGT issues. See Figure 9.3 for potential HSGT corridors in the South as suggested by the Council of Cooperating Governments.

High-speed ground transportation (HSGT) systems could free capacity on some of the nation's congested highways and airports. HSGT systems include trains and

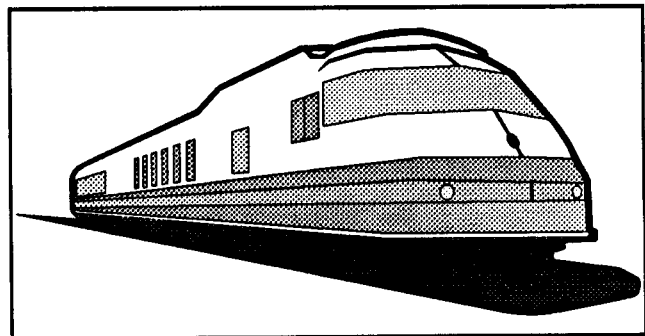
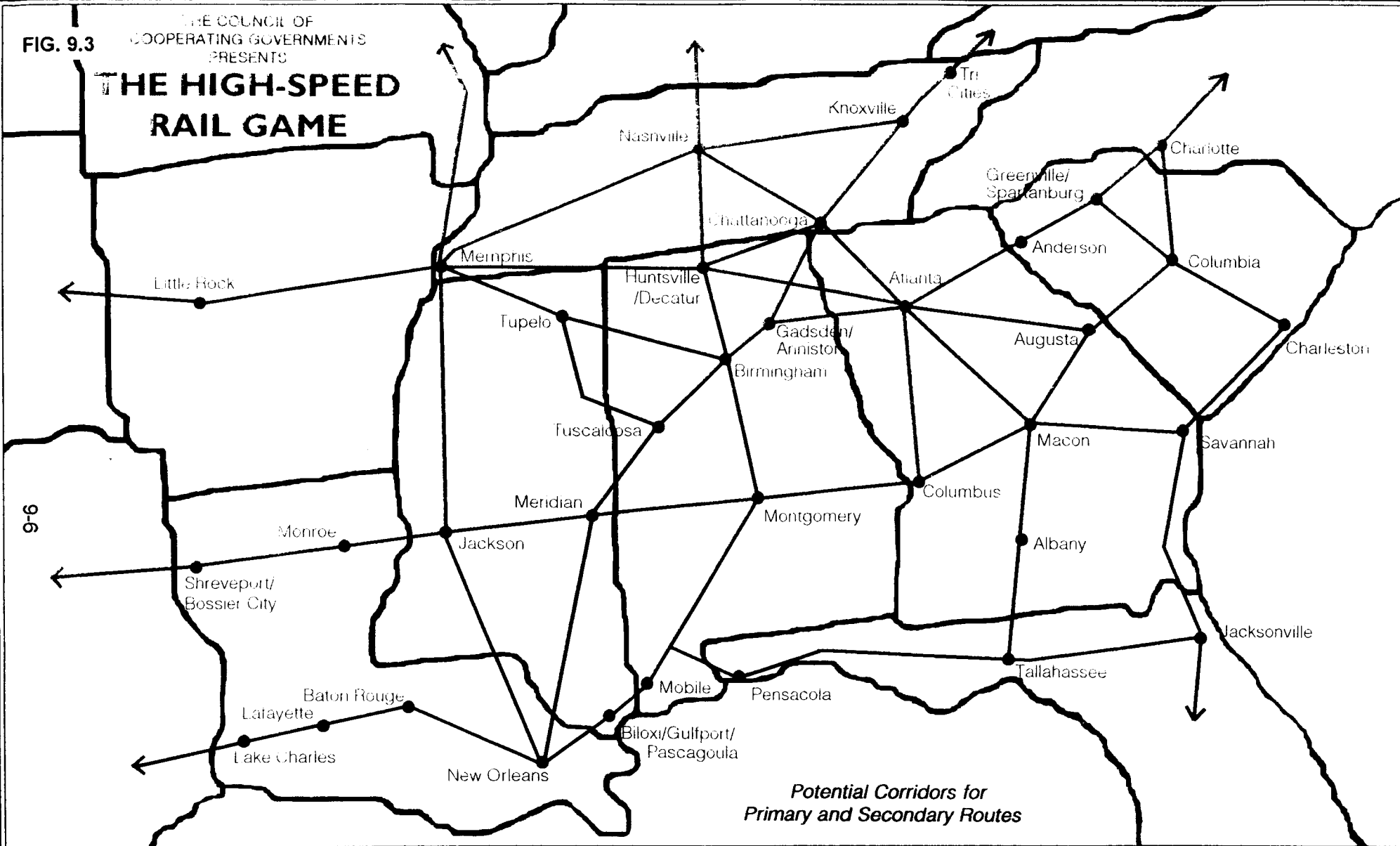


FIG. 9.3

THE COUNCIL OF
COOPERATING GOVERNMENTS
PRESENTS

THE HIGH-SPEED RAIL GAME



OBJECT OF THE HIGH-SPEED RAIL GAME: Connect as many Southeastern cities as possible, using the least miles of track to serve the highest amount of population.

1. You must include at least one destination in each of the following states: SC, GA, AL, MS, LA, AR, and TN.
 2. You must connect your endpoints to the national network in NC, FL, TX or the Midwest.
 3. Bonus points may be obtained by working with other states and localities.
 4. Extra bonus points for actively involving your US Congressman and Senators.
 5. Super bonus points for developing a working strategy for private sector participation.
- WINNERS RECEIVE ALL-NEW TRANSPORTATION INFRASTRUCTURE, WITH THOUSANDS OF TEMPORARY AND PERMANENT JOBS RESULTING FROM REGION-WIDE COOPERATIVE DEVELOPMENT.

Excerpt from Winter Meeting, 1/2/94

COUNCIL OF COOPERATING GOVERNMENTS

A Consortium of local governments
working together for progress

For more information, contact:

Dr. John Katopodis
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magnetic levitation (maglev) systems capable of travelling at 125 miles per hour or faster.

Currently there are three major HSGT choices:

- 1) make incremental improvements to tracks, signalling systems, and grade crossings and purchase modern trains that would permit speeds of between 125 miles per hour and 150 miles per hour on existing rights-of-way.
- 2) build completely new rail infrastructure to support very-high-speed operations of up to 200 miles per hour.
- 3) build maglev systems that could permit speeds of over 250 miles per hour.

HSGT might provide a viable alternative to travel by airplane or automobile in corridors that:

- 1) are heavily travelled
- 2) have congested airports or highways
- 3) are between 150 and 600 miles in length

Incremental improvements can be built for about \$10 million per mile. Incremental improvements include electrifying rights-of-way, eliminating grade crossings, installing new tracks and signals, installing double tracks and acquiring new trains. Through incremental improvements existing railroad systems could allow passenger trains to operate at speeds up to 150 miles per hour.

Very-high-speed rail systems can cost approximately \$20 million per mile. High Speed Ground Transportation (HSGT) systems that operate at speeds faster than 150 miles per hour require new rights-of-way. Existing U.S. rights-of-way have many curves and carry slow traffic, precluding travel at very high speeds.

HSGT cost and speed comparisons:

Metroliner (U.S.)	125 mph	\$10 million per mile
	150 mph	\$15 million per mile
TGV (France)	186 mph	\$20 million per mile
Maglev (Japan)	324 mph (test)	\$30 million per mile

Maglev systems could cost about \$30 million per mile because they require specialized, expensive guideways in addition to relatively straight and level rights-of-way. These systems could compete with air travel in longer corridors. No high-speed maglev is yet operating commercially anywhere in the world, but Germany has certified a prototype maglev system as ready for commercial operation.

Potential social benefits of a maglev system:

- reduced congestion on highways and at airports
- emissions reduction
- safety impacts
- changes in energy consumption

Attributes of HSGT systems:

Faster trips - high peak speed and high acceleration/braking enable average speeds three to four times the national highway speed limit of 65 miles per hour.

High reliability - less susceptible to congestion and weather conditions than air or highway travel.

Petroleum independence - with respect to air and auto as a result of being electrically powered. Petroleum is unnecessary for the production of electricity.

Less polluting - with respect to air and auto, again as a result of being electrically powered.

Higher capacity - than air. At least 12,000 passengers per hour in each direction with potential for even higher capacities at three to four minute headways.

High safety - both perceived and actual, based on foreign experience.

Convenience - due to high frequency of service and the ability to serve central business districts, airports and other major metropolitan area nodes.

Improved comfort - with respect to air due to greater roominess, which allows separate dining and conference areas with freedom to move around. Absence of air turbulence ensures a consistently smooth ride.

GAO Conclusions: Incremental improvements are less costly and more likely to be built in the near term. Considering limited federal, state, and private investment, if any projects are to be completed funds will have to be invested strategically in a few projects. To compete for funds a project would have to demonstrate adequate ridership and revenues as well as social benefits, such as reduction in congestion and pollution.

Sources: US General Accounting Office Report to the Chairman, Committee on Energy and Commerce, House of Representatives on High-Speed Ground Transportation. November 1993.

Final Report on The National Maglev Initiative. September 1993.

INTELLIGENT VEHICLE HIGHWAY SYSTEMS (IVHS)

The IVHS program being conducted by the USDOT, consists of a range of advanced technologies and ideas which, in combination, can improve mobility and transportation productivity, enhance capacity and safety, maximize the use of existing transportation facilities, conserve energy resources, and reduce adverse environmental effects.

IVHS is not a single static technology, but a continually evolving set of technologies. These technologies have been grouped into five broad functional areas:

Advanced Traffic Management Systems (ATMS) are integrated, areawide traffic signal systems and freeway surveillance and control systems utilizing advanced technologies to provide improved surveillance, incident detection and enhanced multi-jurisdictional coordination.

Advanced Traveler Information Systems (ATIS) encompass various technologies for providing a wide range of services to the traveler and/or driver (e.g., real time traffic status, congestion or incident reports, navigation and route guidance).

Commercial Vehicle Operations (CVO) focus on a wide range of commercial fleet operations, including advanced approaches for electronic permitting and reporting systems for use by motor carriers and state regulatory and licensing agencies (e.g., weigh-in-motion and automatic toll collection).

Advanced Public Transportation Systems (APTS) introduce innovative traveler information and communication technologies to increase the use of mass transportation and allow transit operators to improve efficiencies of fleet operations (e.g., audio and visual information on the range of options to consider in choosing a travel mode, and vehicle location and communications technologies to control and manage public transportation systems).

Advanced Vehicle Control Systems (AVCS) involve the application of new vehicle warning and control devices, such as headway monitoring and obstacle detection devices in the near term and fully automated vehicles in the longer term.

CHAPTER X

FINANCIAL PLAN

The Metropolitan Planning Regulations issued by FHWA and FTA require that the long-range plan include a financial plan that demonstrates the consistency of proposed transportation improvements with already available and projected sources of revenue.

This chapter will describe the effort made to conform with the federal mandate of a "financially constrained" Long Range Transportation Plan. The proposed transportation improvements listed in previous chapters have been grouped into three phases (1-5 years, 5-10 years and 10-20 years) in an effort to balance projects with available funds. Phase 1 reflects projects in the current Transportation Improvement Program (TIP).

TRANSPORTATION FUNDING

There are currently several types of funds available to fund transportation projects in the Huntsville urban area. Table 10.1 provides a list of anticipated federal/state revenues for each phase of the long range plan implementation. The level of funds anticipated is generally based on the amounts currently programmed in the State TIP (STIP) for National Highway System (NHS), Surface Transportation Program (STP), Federal Transit Administration (FTA), Appalachian and other programs. Local funding includes city, county and private funding. Funding estimates are in current dollars.

Appalachian (ARC) and Interstate funds are combined in the cost estimate. The state Program Management System (PMS) contains approximately \$27.1 million in combined ARC and Interstate funding through FY 1999. Interstate program funds will expire after construction of the I-565/US 72/Maysville Road interchange and I-565 landscaping projects are completed. ARC funding in the PMS totals \$8.4 million in FY 2001. The remainder is estimated based on a modest annual allocation.

National Highway System (NHS) funds in the state PMS program for FY 95-99 total \$90.1 million, for FY 2000-04 - \$65.6 million and for FY 2005-2015 total \$127.8 million.

Surface Transportation Program (STP) funds are currently in several different categories as designated by Congress in ISTEA as shown in the adjacent box.

The Huntsville urban area is eligible for a total of \$120 million in STP funds. The current 5-year TIP totals \$28.6 million. It is assumed that level of STP funding will remain constant over the life of the plan.

STP enhancement funding is based on 10% of STP funds, or \$12 million.

FTA Section 9 transit capital funding is estimated to remain at the current funding level (\$277,000/year federal).

There is currently approximately \$8 million in the 5-year TIP in the State Program. The Safety and

STP Funding Categories:

10% for safety projects
10% for transportation enhancement activities
50% of remainder to urbanized areas >200,000 population and to other areas based on share of state's population
30% to any area of state

Hazard Elimination Programs contain approximately \$500,000 in the 5-year TIP. It is anticipated that these funding levels will remain constant.

PROGRAM COSTS

Cost estimates included in Table 10.1 were drawn from existing sources, such as the state PMS (project management system) records, and City of Huntsville engineering estimates. Where project costs were not available, cost estimates were derived using Alabama DOT preliminary cost estimate charts or construction estimates for similar projects. All costs are in current dollars.

PROPOSED REVENUES TO COVER SHORTFALLS

According to U.S. DOT Metropolitan Planning Regulations, the financial plan must identify proposed new revenues and/or revenue sources to cover shortfalls. In Table 10.2, it appears that the NHS program will experience a significant shortfall in the Years 2005-2015. This program includes improvements to the major arterials (i.e., Memorial Parkway, Southern Bypass, and University Dr.). With the inclusion of Ardmore Highway to this program, the NHS program is approximately \$136 million out of balance.

It is anticipated that the balance of funds needed to finance the long-range plan will come from the following sources:

1. Local
2. State
3. Congressional
4. Private
5. Toll Roads

[illegible]

TABLE 10.1: ESTIMATED TRANSPORTATION PLAN COSTS

PROG	PROJECT NAME	PROJECT FROM	SPAN TO	FACILITY TYPE	PRELIM ENG	UTILITIES COST	RIGHT OF WAY	CONST COST	TOTAL COST
STOA	FOUR MILE POST RD EXT	BAILEY COVE RD TO TO BIG COVE RD		CONSTRUCT 3-LANE	0	500,000	1,600,000	8,653,629	10,753,629
STOA	HOLMES AVENUE	JORDAN LANE TO WOODSON RD		UPGRADE 2-LN TO 3-LANE	0	500,000	800,000	3,680,000	4,980,000
STOA	PLUMMER ROAD	ARDMORE HWY TO RIDEOUT ROAD		UPGRADE 2-LN TO 3-LANE	0	100,000	118,000	1,693,950	1,911,950
STOA	MERIDIAN ST	OAKWOOD TO PRATT		UPGRADE 2-LN TO 5-LANE	0	0	300,000	1,214,400	1,514,400
STOA	COUNTY LINE RD	@ SOU RR		REPLACE RR OVERPASS & APPROACHES		0	0	2,917,332	2,917,332
STOA	NORTHERN BYPASS	PHASE 1 SR 53 TO PULASKI PIKE		CONSTRUCT 4-LANE	320,000	0	320,000	8,550,710	9,190,710
STOA	WINCHESTER RD	NAUGHER RD TO BELL FACTORY RD		UPGRADE TO 4-LANE	480,000	0	80,000	7,523,300	8,083,300
STOA	SULLIVAN ST	HIGHWAY 20 TO MILL ROAD		UPGRADE 2-LN TO 5-LANE	250,000	250,000	250,000	2,300,000	3,050,000
STAA	SUTTON RD	FOUR MILE POST EXT TO U.S 431 @ BIG COVE RD.		ROADWAY WIDENING	105,000	80,000	330,000	816,500	1,331,500
STOA	WALL TRIANA HWY	MILL ROAD TO HWY 72 WEST		UPGRADE 2-LN TO 3-LANE	165,000	500,000	500,000	2,530,000	3,695,000
STOA	WINCHESTER ROAD	HSV CITY LIMITS TO NAUGHER RD		UPGRADE 2-LN TO 5-LANE	790,000	800,000	1,309,700	12,075,000	14,974,700
STOA	MOORES MILL ROAD	PH 1, US 72 TO WINCHESTER PH 2, WINCHESTER TO NORTH BYPASS		UPGRADE 2-3 LI TO 5-LANE	300,000 380,000	250,000 250,000	320,000 400,000	4,600,000 5,750,000	5,470,000 6,780,000
STOA	SLAUGHTER ROAD	INTERSTATE 565 TO U.S. 72 WEST		UPGRADE 2-LN TO 5-LANE	410,000	500,000	750,000	6,325,000	7,985,000
STOA	HUGHES ROAD	U.S 72 WEST TO OLD MADISON PIKE		UPGRADE 2-LN TO 4-LANE	170,000	256,000	500,000	2,587,500	3,513,500

TABLE 10.1: ESTIMATED TRANSPORTATION PLAN COSTS (CITY OF HUNTSVILLE PROJECTS)

	PROJECT NAME	PROJECT FROM	SPAN TO	FACILITY TYPE	PRELIM ENG	UTILITIES COST	RIGHT OF WAY	CONST COST	TOTAL COST
LOC	HOLMES AVENUE PH 2	JORDAN LANE	TO SPARKMAN	UPGRADE 2-LN TO 3-LANE	260,000	0	0	2,931,000	3,191,000
LOC	WYNN DRIVE EXT & ADVENTIST BLVD	WYNN DR	TO ADVENTIST ADVENTIST TO OAKWOOD	CONST 5-LN CONST 4-LN	104,000 280,000	0 0	0 0	1,300,000 3,500,000	1,404,000 3,780,000
LOC	CHANEY THOMPSON	WYNTERHALL RD	TO GREEN COVE ROAD	UPGRADE 2-LN TO 3-LANE	108,000	0	0	1,708,000	1,816,000
LOC	TAYLOR ROAD	FROM SUTTON RD	TO HUNTSVILLE CITY LIMITS	UPGRADE 2-LN TO 3-LANE	203,000	250,000	345,000	2,500,000	3,298,000
LOC	LEEMAN FERRY EXT	AIRPORT ROAD	TO VERMONT ROAD	CONSTRUCT 3-LANE	85,125	100,000	500,000	1,135,000	1,820,125
LOC	VERMONT ROAD EXT	LEEMAN FERRY EXT	TO TRIANA BLVD EXT	CONSTRUCT 3-LANE	85,125	100,000	250,000	1,135,000	1,570,125
LOC	BAILEY COVE ROAD EXT.	GREEN COVE ROAD	TO HOBBS ISLAND ROAD	CONSTRUCT 5-LANE	160,000	250,000	300,000	1,980,000	2,690,000
LOC	HOBBS ROAD EXT	MEMORIAL PARKWAY	TO REDSTONE ROAD	CONSTRUCT 5-LANE	206,250	250,000	250,000	2,750,000	3,456,250
LOC	HOBBS ROAD	REDSTONE RD	TO SOUTHERN BYPASS	UPGRADE 2-LN 5-LANE	206,400	250,000	750,000	2,752,000	3,958,400
LOC	DUG HILL ROAD	U.S HWY 431	TO KING DRAKE ROAD	UPGRADE 2-LN TO 3-LANE	138,750	250,000	250,000	1,850,000	2,488,750
LOC	HIGH MOUNTAIN ROAD	BANKHEAD PARKWAY	TO U.S HWY 72 EAST	CONSTRUCT 2-LANE	187,500	500,000	750,000	2,500,000	3,937,500
LOC	STRINGFIELD RD.	BLUE SPRINGS RD	TO JORDAN LANE	UPGRADE 2-LN TO 3-LANE	500,000	0	0	5,499,000	5,999,000
LOC	EXPLORER BVLD	EXPLORER WAY	TO EAST OF MARINER WAY	CONSTRUCT 4-LANE	168,750	250,000	650,000	2,250,000	3,318,750

TABLE 10.1: ESTIMATED TRANSPORTATION PLAN COSTS (CITY OF HUNTSVILLE PROJECTS)

PROJECT NAME		PROJECT FROM	SPAN TO	FACILITY TYPE	PRELIM ENG	UTILITIES COST	RIGHT OF WAY	CONST COST	TOTAL COST
LOC	MARINER WAY	OLD MADISON PIKE TO EXPLORER BLVD		CONSTRUCT 4-LANE	168,750	250,000	250,000	2,250,000	2,918,750
LOC	FARROW ROAD	EXPLORER BLVD TO SLAUGHTER ROAD		UPGRADE 2-LN TO 4-LANE	81,975	250,000	500,000	1,093,000	1,924,975
LOC	WINCHESTER RD	MERIDIAN ST TO HSV LMTS		UPGRADE 2-LN TO 5-LANE	270,000	0	0	3,080,000	3,350,000
LOC	EASTERN BYPASS	US 72 TO US 431		UPGRADE 2-LN TO 4-LANE	0	0	0	3,159,000	3,159,000
LOC	MARTIN RD	WHITESBURG TO MEM PKWY		UPGRADE 2-LN TO 4-LANE	163,950	0	0	2,186,000	2,349,950

TOTAL CITY OF HUNTSVILLE CAPITAL IMPROVEMENTS PROGRAM AND OTHERS

\$56,430,575

TABLE 10.2: PROJECT COST AND FUND AVAILABILITY SUMMARY

<u>PROGRAM</u>	<u>FY 1995-99 TIP HWY AND TRANSIT PROJECTS</u>		<u>FY 2000-04 HWY AND TRANSIT PROJECTS</u>		<u>FY 2005-15 HWY AND TRANSIT PROJECTS</u>		<u>TOTAL HWY AND TRANSIT PROJECTS</u>	
	<u>COST</u>	<u>FUNDS</u>	<u>COST</u>	<u>FUNDS</u>	<u>COST</u>	<u>FUNDS</u>	<u>COST</u>	<u>FUNDS</u>
INTERSTATE / ARC	27,123,000	27,123,000	8,414,000	8,414,000	21,890,000	27,937,000	\$57,427,000	\$63,474,000
NATIONAL HWY SYSTEM	90,109,000	90,109,000	65,554,000	65,554,000	263,658,000	127,779,000	\$419,321,000	\$283,442,000
STP OTHER AREA / ANY AREA / ENHANCEMENT	28,638,000	28,638,000	28,638,000	28,638,000	61,938,000	63,003,600	\$119,214,000	\$120,279,600
FTA SECTION 9 CAPITAL	1,645,000	1,645,000	1,625,000	1,625,000	3,250,000	3,250,000	\$6,520,000	\$6,520,000
FTA SECTION 9 OPERATING	6,885,000	6,885,000	7,445,000	7,445,000	15,990,000	15,990,000	30,320,000	\$30,320,000
SAFETY/HAZARD ELIM	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>500,000</u>	<u>1,100,000</u>	<u>1,100,000</u>	<u>2,100,000</u>	<u>\$2,100,000</u>
TOTAL AVAILABLE	\$154,900,000	\$154,900,000	\$112,176,000	\$112,176,000	\$367,826,000	\$239,059,600	\$634,902,000	\$506,135,600

FUND AVAILABILITY ASSUMPTIONS (all include local match): based on current TIP and state PMS program projected to future years
 Costs include local match. Cost estimates and estimates of available funds are in current dollars.
 Funds from ARC and the State Program will be needed to make up part of the deficit in NHS funding

PUBLIC INVOLVEMENT PROCEDURES FOR TRANSPORTATION PLANNING IN THE HUNTSVILLE URBANIZED AREA

PURPOSE

The purpose of this policy is to comply with U.S. Department of Transportation rules requiring provisions to ensure early and continuing public involvement in the development of transportation plans and programs for the Huntsville Area Transportation Study.

LEGAL AUTHORITY

An agreement concerning a transportation planning process for the Huntsville Urbanized Area was executed in April 1976 by Madison County; the Cities of Huntsville, Madison, Triana, and Owens Cross Roads; the Top of Alabama Regional Council of Governments; and the Alabama Highway Department. This Agreement includes provisions for a representative Citizens' Advisory Committee with the following responsibilities:

1. Review and respond to local transportation plans prepared for the area.
2. Assess the local areawide transportation and transportation related needs as perceived by area residents.
3. Initiate actions related to providing area residents the opportunity to input individual, group, private, and semi-private ideas, suggestions, needs, and concepts for consideration and recommendation to the Metropolitan Planning Organization and/or the Technical Coordinating Committee.
4. Objectively assess the social, economic, and physical impact within the area of all transportation plans submitted by the Metropolitan Planning Organization or Technical Coordinating Committee.
5. Assist the transportation planning staff, where possible, in the development of specific program solutions to areawide needs as identified through community research and public meetings.

CITIZENS' ADVISORY COMMITTEE MEMBERSHIP

By-laws of the Citizens Advisory Committee provide for committee membership to be composed of 16 members appointed by the officials of local government who serve on the Metropolitan Planning Organization. The membership of the CAC is composed of the following:

Eight (8) representatives from the City of Huntsville
Two (2) representatives from Madison County
Two (2) representatives from the City of Madison
Two (2) representatives from the City of Owens Cross Roads
Two (2) representatives from the Town of Triana

PUBLIC INVOLVEMENT PROCESS

The public involvement process for transportation plans and programs shall continue to

focus upon the activities of the Citizens' Advisory Committee. Public announcements shall be provided to the newspapers of general circulation, radio, and television stations within the study area, inviting participation by the general public in meetings of the CAC.

Public Hearings shall be conducted in conjunction with CAC meetings for development of the following:

1. Transportation Improvement Program
2. Long-Range Plan updates
3. Other major transportation policy plans or programs identified by the Metropolitan Planning Organization.

A public hearing notice shall be published in a newspaper of general circulation in Madison County. Also, all public hearing notices and information shall be broadcast on cable television. All proposed plans will be available for review prior to the public hearing. Results of the public hearings and CAC meetings shall be documented and presented for use in the considerations of the Metropolitan Planning Organization; shall be made a part of the MPO minutes; and said minutes shall be provided to CAC members.

When significant written and oral comments are received on the draft transportation plan or TIP (including the financial plan) as a result of the public involvement process, a summary, analysis, and report on the disposition of comments shall be made a part of the final plan and TIP.

If the final transportation plan or TIP differs significantly from the one which was made available for public comment by the MPO and raises new material issues which interested parties could not reasonably have foreseen from the public involvement efforts, an additional opportunity for public comment on the revised plan or TIP shall be made available.

The public involvement process as required by the ISTEA regulation, must include a methodology of informing the Physically Disadvantaged segment of the population that would like to participate in the planning process. Public officials must be notified no later than seven (7) days prior to the date of the scheduled meeting so that officials may make special arrangements, if necessary, in order to facilitate their participation in the proceedings. All requirements of the Americans with Disabilities Act will be followed.

ADOPTION AND REVISION OF THE PUBLIC INVOLVEMENT PROCEDURES

The MPO shall publish these procedures in a newspaper of general circulation and allow 45 days for written public comment before adoption by the MPO.

The public involvement process shall be periodically reviewed by the MPO in terms of its effectiveness in assuring that the process provides full and open access to all.

When the MPO revises its established public involvement procedures, it shall publish the new procedures and allow 45 days for written public comment before the procedures are adopted.

ENVIRONMENTAL PLANNING FACTORS MATRIX									= POTENTIAL PROBLEMS			
PROG	PROJECT NAME	PROJECT FROM	SPAN TO	FACILITY TYPE	HISTORIC PROPERTIES	PROTECTED LANDS	AND RECREATION	TOPOGRAPHY	FLOOD PLAINS	WET LANDS	LAND FILLS	ETC..
NHS	MEMORIAL PARKWAY NORTH	OAKWOOD AVE TO MERIDIAN ST.		4-LN EXPRESWY W/SERVICE RDS								
		MAX LUTHER DR.		OVERPASS								
		SPARKMAN DR.		OVERPASS								
		MASTIN LAKE RD.		OVERPASS								
		WINCHESTER RD.		OVERPASS								
		MERIDIAN ST		OVERPASS								
NHS	MEMORIAL PARKWAY SOUTH	AIRPORT RD TO SO. OF SOUTHERN BYPASS		4-LN EXPRESWY W/SERVICE RDS								
		MARTIN ROAD		OVERPASS								
		LILY FLAG RD		OVERPASS								
		WEATHERLY/WHITESBURG		OVERPASS								
		MTN GAP RD		OVERPASS								
		HOBBS RD		OVERPASS								
		GREEN COVE RD		OVERPASS								
NHS	SOUTHERN BYPASS AND WEATHERLY RD EXT	I-565 TO MARTIN RD		EXPRESSWAY								
		MARTIN RD TO WEATHERLY		EXPRESSWAY								
		WEATHERLY TO MEM PKWY		EXPRESSWAY								
		WEATHERLY RD EXT		4-LN ARTERIAL								
NHS	GOVERNORS DRIVE	MEMORIAL PARKWAY TO CALIFORNIA ST		UPGRADE 4LN TO 7 LANES								
NHS	UNIVERSITY BLVD	RIDEOUT ROAD TO COUNTY LINE ROAD		UPGRADE 4LN TO 7 LANES								
I/ARC	INTERSTATE 565	US HWY 72 EAST @ MAYSVILLE RD		INTERCHANGE								
ARC	US. HWY 72 EXPRESSWAY	HIGH MOUNTAIN RD & U.S HWY 72 EAST		BRIDGE								
		MOORES MILL ROAD & U.S HWY 72 EAST		INTERCHANGE								
		NORTHERN BYPASS & U.S HWY 72 EAST		INTERCHANGE								
STOA	FOUR MILE POST RD EXT	BAILEY COVE RD TO TO BIG COVE RD		CONSTRUCT 3 LANES								
STOA	HOLMES AVENUE	JORDAN LANE TO WOODSON RD		UPGRADE 2LN TO 3 LANES								
STOA	PLUMMER ROAD	ARDMORE HWY TO RIDEOUT ROAD		UPGRADE 2LN TO 3 LANES								
STOA	MERIDIAN ST	OAKWOOD TO PRATT		UPGRADE 2-LN TO 5-LANE								

ENVIRONMENTAL PLANNING FACTORS MATRIX									= POTENTIAL PROBLEMS			
PROG	PROJECT NAME	PROJECT FROM	SPAN TO	FACILITY TYPE	HISTORIC PROPERTIES	PROTECTED LANDS	AND RECREATION	TOPOGRAPHY	FLOOD PLAINS	WET LANDS	LAND FILLS	ETC..
STOA	COUNTY LINE RD	@ SOU RR		RPL OVERPASS & APPROACHES								
STOA	NORTHERN BYPASS	PHASE 1		CONSTRUCT								
		SR 53 TO PULASKI PIKE		TO 4 LANE EXPRESSWAY								
STOA	WINCHESTER RD	NAUGHER RD TO BELL FACTORY RD		UPGRADE TO 4-LN								
STOA	SULLIVAN ST	HIGHWAY 20 TO MILL ROAD		UPGRADE 2LN TO 5 LANES								
STAA	SUTTON RD	FOUR MILE POST EXT TO U.S 431 @ BIG COVE RD.		ROADWAY WIDENING								
STOA	WALL TRIANA HWY	MILL ROAD TO HWY 72 WEST		UPGRADE 2LN TO 3 LANES								
STOA	WINCHESTER ROAD	HSV CITY LIMITS TO NAUGHER RD		UPGRADE 2LN TO 5 LANES								
STOA	MOORES MILL ROAD	PH 1, US 72 TO WINCHESTER		UPGRADE 2-3 LN								
		PH 2, WINCHESTER TO NORTH BYPASS		TO 5 LANES								
STOA	SLAUGHTER ROAD	INTERSTATE 565 TO U.S. 72 WEST		UPGRADE 2LN TO 5 LANES								
STOA	HUGHES ROAD	U.S 72 WEST TO OLD MADISON PIKE		UPGRADE 2LN TO 4 LANES								
STOA	COUNTY LINE ROAD	MILL ROAD TO SR 20		UPGRADE 2LN TO 4 LANES								
STOA	OLD MADISON PIKE	THORNTON IND PARK TO MADISON CITY LIMITS		UPGRADE 2LN TO 4 LANES								
STOA	OLD MADISON PIKE	MADISON CITY LIMITS TO WALL TRIANA HIGHWAY		UPGRADE 2LN TO 4 LANES								
STOA	BROWNS FERRY ROAD	WALL TRIANA HIGHWAY TO CHAPEL ROAD		UPGRADE 2LN TO 4 LANES								
STOA	NORTHERN BYPASS	PULASKI PIKE TO US 231		UPGRADE 2-LN TO 4 LANE EXPRESSWAY								
STOA	NORTHERN BYPASS	EAST OF U.S 231 THROUGH HOMER NANCE RD. TO U.S 72 EAST		CONSTRUCT 5-LANE								
STOA	BROWNS FERRY ROAD EXTENSION	CHAPEL ROAD TO COUNTY LINE ROAD		CONSTRUCT 4 LANES								

ENVIRONMENTAL PLANNING FACTORS MATRIX									= POTENTIAL PROBLEMS			
		PROJECT	SPAN	FACILITY	HISTORIC	PROTECTED	AND		FLOOD	WET	LAND	
PROG	PROJECT NAME	FROM	TO	TYPE	PROPERTIES	LANDS	RECREATION	TOPOGRAPHY	PLAINS	LANDS	FILLS	ETC..
UNF	WALL TRIANA HWY	EAST GATE TO TENN R.		UPGRADE 2LN TO 5 LANES								
UNF	EASTERN BYPASS	U.S. 72 EAST TO		UPGRADE 2LN								
	PH 2 (PH 1 IN HSV CIP)	HUNTSVILLE CITY LIMITS		TO 5 LANE								
UNF	NORTHERN BYPASS	PULASKI PIKE TO US 231		UPGRADE 2LN TO 4 LANE								
				EXPRESSWAY								
UNF	NORTHERN BYPASS	EAST OF U.S 231		CONSTRUCT								
		THROUGH HOMER NANCE RD.		5-LANE								
		TO U.S 72 EAST										

ETC... UTILITY DELIVERY POINTS, UNIVERSITIES, PUBLIC PROPERTIES, INDUSTRIAL PARKS
HOSPITALS, WATER TREATMENT PLANTS, SEWAGE TREATMENT PLANTS, REDSTONE ARSENAL FACILITIES

CITY OF HUNTSVILLE CAPITAL IMPROVEMENT PROJECTS AND OTHERS				CEMETERIES HISTORIC PROPERTIES	POTENTIAL PROTECTED LANDS	PARKS AND RECREATION	TOPOGRAPHY	FLOOD PLAINS	WET LANDS	LAND FILLS	ETC..*
PROJECT NAME	PROJECT FROM	SPAN TO	FACILITY TYPE								
LOC HOLMES AVENUE PH 2	JORDAN LANE	TO SPARKMAN	UPGRADE 2LN TO 3 LANES								
LOC WYNN DRIVE EXT	UNIVERSITY DRIVE	TO ADVENTIST BLVD	CONSTRUCT 5 LANES								
LOC CHANEY THOMPSON	WYNTERHALL RD	TO GREEN COVE ROAD	UPGRADE 2 LN TO 3 LANES								
LOC WAYNE ROAD	OLD MONROVIA RD	TO UNIVERSITY DR	UPGRADE 2 LN TO 3 LANES								
LOC TAYLOR ROAD	FROM SUTTON RD	TO HUNTSVILLE CITY LIMITS	UPGRADE 2 LN TO 3 LANES								
LOC LEEMAN FERRY EXT	AIRPORT ROAD	TO VERMONT ROAD	CONSTRUCT 3 LANES								
LOC VERMONT ROAD EXT	LEEMAN FERRY EXT	TO TRIANA BLVD EXT	CONSTRUCT 3 LANES								
LOC BAILEY COVE ROAD EXT.	GREEN COVE ROAD	TO HOBBS ISLAND ROAD	CONSTRUCT TO 5 LANES								
LOC HOBBS ROAD EXT	MEMORIAL PARKWAY	TO REDSTONE ROAD	CONSTRUCT 5 LANES								
LOC HOBBS ROAD	REDSTONE RD	TO SOUTHERN BYPASS	UPGRADE 2 LN 5 LANES								
LOC DUG HILL ROAD	U.S HWY 431	TO KING DRAKE ROAD	UPGRADE 2 LN TO 3 LANES								
LOC HIGH MOUNTAIN ROAD	BANKHEAD PARKWAY	TO U.S HWY 72 EAST	CONSTRUCT 2 LANES								
LOC STRINGFIELD RD.	BLUE SPRINGS RD	TO JORDAN LANE	UPGRADE 2LN TO 3 LANES								
LOC EXPLORER BLVD	EXPLORER WAY	TO EAST OF MARINER WAY	CONSTRUCT 4 LANES								
LOC MARINER WAY	OLD MADISON PIKE	TO EXPLORER BLVD	CONSTRUCT 4 LANES								
LOC FARROW ROAD	EXPLORER BLVD	TO SLAUGHTER ROAD	UPGRADE 2LN TO 4 LANES								
LOC WINCHESTER RD	MERIDIAN ST	TO CITY LIMITS	UPGRADE 2LN TO 5 LANES								
LOC EASTERN BYPASS	US 72	TO US 431	UPGRADE 2LN TO 4 LANES								
LOC MARTIN RD	WHITESBURG	TO MEM PKWY	UPGRADE 2-LN TO 4-LN								

ETC... UTILITY DELIVERY POINTS, UNIVERSITIES, PUBLIC PROPERTIES, INDUSTRIAL PARKS
HOSPITALS, WATER TREATMENT PLANTS, SEWAGE TREATMENT PLANTS, REDSTONE ARSENAL FACILITIES

APPENDIX C PUBLIC HEARING COMMENTS

MPO staff presented the 20-year plan at a public hearing held March 21, 1995, at the Huntsville Municipal Building. Mr. Landau showed a map of the study area as defined by the U.S. Census Bureau. He explained that the plan identified major projects of regional importance, but did not specify the locations of roads.

Mr. Moore described how travel demand modelling was used in the formulation of the plan. He stated that in 1992 there were approximately 800,000 trips a day in the study area, with a projected increase to 1.2 million trips a day by the year 2015. He outlined the major new projects in the plan including the Southern Bypass, Four Mile Post Road Extension, Explorer Boulevard (Research Park) and the Northern Bypass (extension of Bob Wade Lane.) Mr. Moore then listed the 15 criteria used for prioritizing projects, notably the need to relieve congestion and save travel costs. He stated that a major investment element would be the Memphis-Atlanta corridor study, which is still in the planning stages.

Mr. Brown addressed the public transit section of the report and stated that he felt that the city's continuing enhancement program would meet projected needs for the next 20 years. He noted that as the population ages there would be an increased need for services to senior citizens and the disabled.

Mr. Landau concluded the presentation with a final project cost and funding availability analysis, shown in five-year increments. He noted that ISTEA legislation requires that project costs not exceed available funding.

Mr. Dinges opened the meeting to comments from CAC members and the public.

Fred Johnston (CAC member) asked if there was money available for improvements to Ardmore Highway, which is one of the most highly traveled roads in the area. (Mr. Landau noted that the Rideout Road extension should relieve traffic.)

Eugenia Washington, 5015 Moores Mill Road, asked "where the cars would go" between Winchester Road and Highway 72 if Moores Mill Road is five-laned. (Mr. Dinges responded that there was also a proposal to upgrade Highway 72, which is one of the proposed routes for the Atlanta-Memphis project, to a limited access highway.) Mrs. Washington also asked whether her land would be taken to widen Moores Mill Road.

(Mr. Will), 101 Mikey Way, asked if the city had plans to improve Jordan Road at Homer Nance. (Mr. Dinges responded that this was part of the proposed Northern Bypass but that it may be more than 20 years before the project is funded.)

John Washington, 5015 Moores Mill Road, asked if the widening of Shields Road was in the 20-year plan. (Mr. Dinges responded that it was not in the plan and that since it is in the county, the county would have to agree to fund the improvements or request that it be added to the plan.)

David Wilson, 515 Lanier, asked how priorities were determined. (Mr. Dinges explained that scheduling was addressed in the 5-year plan, which is the next step in the planning process.)

Jerry Rogers, 252 Kelly Cemetery Road, asked what quadrant would see the most growth according to the studies. (Mr. Dinges stated that copies of the employment, housing and population projections for the 17

sub-areas were available from the planning division.)

Ron Hamby, director, IIC (Airport Authority), 1000 Glen Hearn Boulevard, explained that the Airport Authority had been invited to give input into the 20-year plan and that they were concerned that the route of the Memphis-Atlanta corridor be located adjacent to the airport near I-565. He noted that the Huntsville Intermodal facility was experiencing rapid growth at a time when other facilities are at full capacity and now served a 150-mile radius. Mr. Hamby stated that he was impressed with the detailed work done by the MPO and the Planning Commission. (Mr. Dinges noted that information and recommended additions provided by the Airport Authority would be incorporated in the final plan.)

Tom Woodall (CAC member) asked if I-565 would have to be upgraded. (Mr. Dinges responded that that would be a consideration of the Memphis to Atlanta corridor study but that projections suggest that the impact would not be significant.)

John Wilkie, 2025 Flagstone, Madison, asked whether planned improvements to Wall Triana Highway included a bridge over the river. (Mr. Dinges responded that this was not part of the plan at this time.) Mr. Wilkie asked if the county would support upgrading the road south of the river. (Mr. Dinges noted that there had been some discussion of a toll road "as a short cut to Florida" but that the feasibility of such a project had not yet been determined.)

Ed Mitchell, P.O. Box 524, Huntsville, objected that the Southern Bypass was shown as the second choice for the Memphis-Atlanta corridor and that there had been no public involvement in this decision. He noted that the U.S. Highway 72 route presented to Congress by the Coalition "was the linchpin of planning for the airport as far back as 1961." Mr. Mitchell also pointed to the need to plan a route for a fuel pipeline. (Mr. Dinges noted that the State "has come up with 60 ways (the corridor) can go.")

Mr. Hamby stated that the Airport Authority's concern was that intermodal cargo traffic normally flows East to West and not North to South, so that the southern route south of the river would add 40 to 50 miles to the trucking route at a cost of approximately \$1.35 cents a mile. He noted that truck density for cargo at the airport was around 50,000 trucks a year.

Rick Esneault, 1505 Greentree Trail, objected to the proposed road on Green Mountain off Old Brook Trail at Bailey Cove Road. He pointed to geological hazards including a sink hole and an active landslide at Johsua Drive. In addition Mr. Esneault stated that his lot had a 60-foot drop-off front and back and he expressed concern about blasting with the road planned to cut through his back yard. Another hazard, Mr. Esneault noted, was that during heavy rains water shoots out of the side of the mountain and flows directly across the proposed road.

Mr. Dinges explained that the proposed road was designed to provide access to 10,000 acres of flat land on Green Mountain and would not be built unless or until that property develops. He advised that the location of the road could change and that it would have to be built to improved city standards.

Ed McDaniel, 461 Robins Road, Harvest, asked about plans for widening Governors Drive between California Street and Memorial Parkway. (Mr. Dinges stated that this project was not yet in the 5-10 year plan although it has been on the long range plan for years. He stated that the project will become more important but that the improvements to Four Mile Post Road should relieve some of the traffic.)

John Wilkie raised a question about the alternate route for the Memphis to Atlanta corridor and expressed concern about traffic on the Parkway if for any reason I-565 is not found to be suitable. He

suggested that a better secondary proposal would be from the airport crossing the river and connecting with the Southern Bypass. (Mr. Dinges explained that such a route would go through Redstone Arsenal.)

Questioned by Mr. Washington about improvements to Ardmore Highway 53, Mr. Dinges confirmed that it was not on the plan but that the recommendation that it be included would be forwarded to the MPO.

There being no further comments for the record, the public hearing was closed.